FEBRUARY, 1938

# ELECTRICAL SOUTH

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*THE Hotel Greenville which opened in 1935, has become so popular that an annex is being added with seventy-five new rooms to open soon.*

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# CHARACTER

Whenever someone or something attains a high position of leadership . . . you will find upon close examination that one of the chief elements of that success is CHARACTER. And, to be more specific, the respect enjoyed in the industry by Bull Dog Electric Products Company, can be attributed, we believe, to the character of Bull Dog Products . . . to the character of the entire makeup of the organization. Trustworthiness . . . unswerving loyalty to an ideal . . . a firm desire to produce a better product . . . all motivated by the desire to serve you better. Thus we describe that intangible something in Bull Dog Electric Products called CHARACTER.

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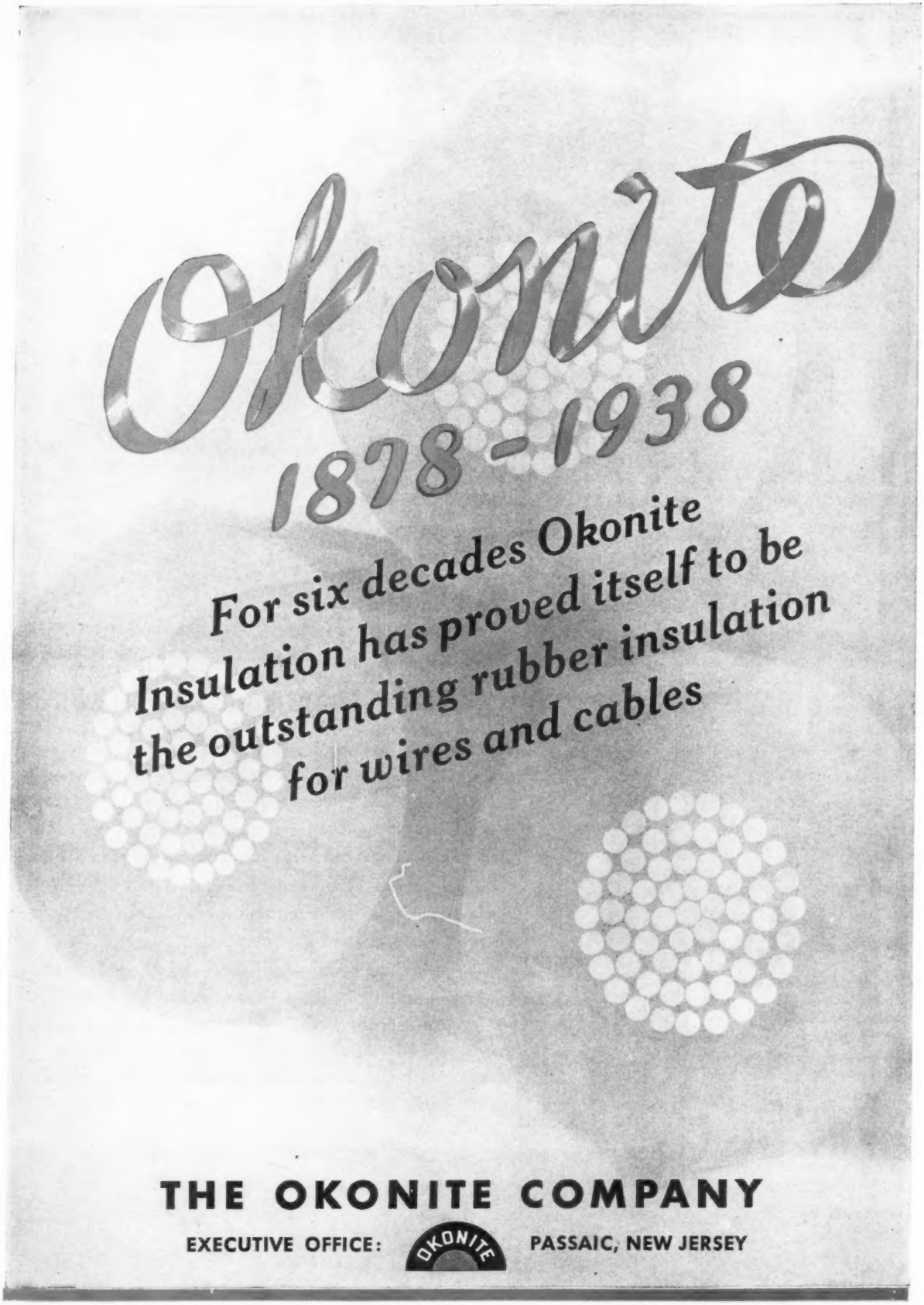
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THERE'S A SWITCH WE NEVER HAVE TO BOTHER WITH, JOE!
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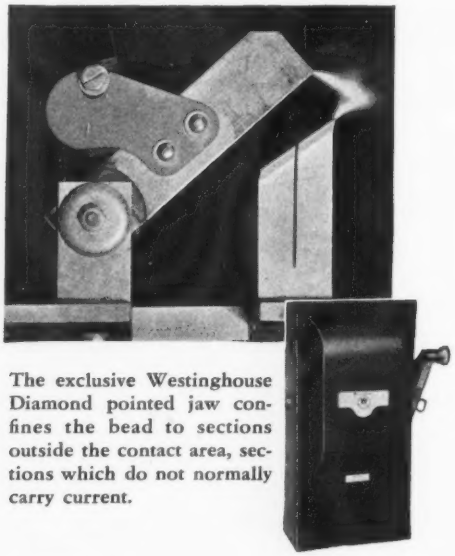

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Volume 18
No. 2

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# ELECTRICAL SOUTH

*for*

*FEBRUARY, 1938*

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# BETTER LIGHT-BETTER SIGHT *marches on!*

*Recent Survey Shows*

## HOW UTILITIES CAN STEP UP LOAD WITH ACTIVE LIGHTING CAMPAIGNS

Data recently secured by surveying homes, spread over all income classes in four cities, offer convincing evidence of how utilities can increase lighting load by sponsoring active light conditioning campaigns, revolving around the proper lamps for safe seeing.

The table at the right shows the findings in each of these cities. The extent and value of the lighting campaigns carried on by the utilities in these cities, previous to the survey, is evident from a study of the figures.

For example, City C had sponsored a very active empty socket campaign. Results show approximately half as many empty sockets in that city as compared with Cities A or B where relatively no empty socket activity had been carried on. City D, on the other hand, which had not actively promoted bulb sales, had nearly three times as many empty sockets as City C. Yet City D had put on a concentrated I. E. S. BetterSight Lamp campaign and topped each of the other three.

### *Other interesting facts*

1. In the homes surveyed there was an average loss of about 8 kw-hr. due to empty sockets.

2. There were only 1.7 spare lamps on hand, of which 1.4 were 60-watts and below.

3. In the cities A and B only 30% of the homes had spare lamps as compared with 63% in City C.

In short, the survey shows that where utilities put on active lighting campaigns, very definite load building results accrue. General Electric Company, Dpt. 166-E.S., Nela Park, Cleveland, O.

*A comparison of home lighting data in four cities in Eastern and Middle Western United States*

| | CITY A | CITY B | CITY C | CITY D |
|---|---|---|---|---|
| 1. Number of empty sockets per home | 3.0 | 3.2 | 1.5 | 3.7 |
| 2. Per cent of empty sockets per home | 11 | 10 | 5 | 16 |
| 3. Per cent of I.E.S. BetterSight Lamps in living room | 8 | 19 | 15 | 30 |

THEY STAY BRIGHTER LONGER

GENERAL ELECTRIC

ELECTRICAL SOUTH

*FEBRUARY, 1938*

# I. E. S.—
# What This Symbol Means

By Roy A. Palmer
Illuminating Engineer
Duke Power Co., Charlotte, N. C.

SEVERAL months ago, a test was conducted in Buffalo, N. Y. to determine the extent to which the publicity on I.E.S. lamps during the past few years had been impressed upon the public. People were asked at random what was meant by an I.E.S. lamp, why it was different from other lamps, etc. It was quite disappointing to find how little was actually known about them, yet the public has accepted these lamps with great alacrity and confidence.

The advent of the I.E.S. lamp revolutionized the portable lamp business. It has proved to be a marvelous load builder for central stations and, above all, it has been the opening wedge in successfully bringing safer and more comfortable seeing conditions to millions of people. Surely electrical men should be familiar with the organization which has brought about an activity producing such astounding results, but the writer has frequently noted that they, like the public, in general are not as well informed about the Illuminating Engineering Society as they should be.

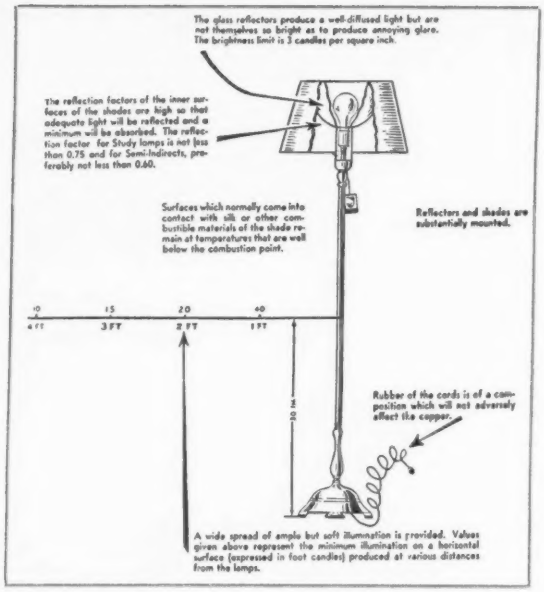
Back in 1906 a group of men interested in light and the application of lighting got together and formed the Illuminating Engineering Society for " . . . the advancement of the theory and practice of illuminating engineering and the dissemination of knowledge relating thereto." The Society has no commercial interest whatever although the dissemination of the information presented through its publications and other channels has obviously resulted in commercial benefit to central stations and manufacturers.

Our present high standard of living is due in no small part to the cheap, safe and convenient use of artificial light. The various publications of the Society during its thirty-odd years of existence constitute an historical record of the progress of mankind emerging from darkness to a potential plane of human activity that staggers the imagination of even some of the Society's staunchest members.

**Professor H. B. Dates, president of the Illuminating Engineering Society for 1938**

From the production of artificial light by various sources of light and its related characteristics of brightness and spectral quality, to the technicalities of light control, equipment design and the practical application of light in factories, homes, stores, offices, highways and countless other places, the Illuminating Engineering Society has been the common meeting ground where pure scientists, physicists, designers, architects, physicians, optometrists and oculists, engineers and others interested in lighting have exchanged ideas and given information for the benefit of mankind.

The principal publication of the Society is its *Transactions*, published ten times a year and containing the papers and discussions presented at the annual convention, as well as news items of the lighting fraternity, notes on meetings of the Society's various sections and chapters throughout the country, and a section having descriptions and illustrations of outstanding examples of the use of lighting architecture. The latter are assembled


The glass reflectors produce a well-diffused light but are not themselves so bright as to produce annoying glare. The brightness limit is 3 candles per square inch.
The reflection factors of the inner surfaces of the shades are high so that adequate light will be reflected and a minimum will be absorbed. The reflection factor for Study lamps is not less than 0.75 and for Semi-Indirects, preferably not less than 0.60.
Surfaces which normally come into contact with silk or other combustible materials of the shade remain at temperatures that are well below the combustion point.
Reflectors and shades are substantially mounted.
10
15
20
40
4 FT
3 FT
2 FT
1 FT
Rubber of the cords is of a composition which will not adversely affect the copper.
A wide spread of ample but soft illumination is provided. Values given above represent the minimum illumination on a horizontal surface (expressed in foot candles) produced at various distances from the lamps.

**Some of the details of lamp design affected by IES specifications are given above . . . .**

at the end of the year in a separate booklet for distribution to architects, builders, engineers and others interested in the application of light as an integral part of the architectural design of a building.

There are other publications issued by the Society which may have a more limited circulation but which nevertheless exert an enormous influence on the application of artificial light and affecting millions of people. One of these is the "Standards of School Lighting" which is a guide for architects, school authorities, legislators, state and municipal authorities and others interested in school lighting. These standards are accepted by the American Standards Association and endorsed by a large number of national organizations interested in this subject. Other important publications of a similar nature are the "Code of Lighting Factories, Mills and Other Work Places," "Code of Street Lighting," and "Code of Highway Lighting."

To assure progress in any field, standards and definitions must be set up so that measurements, design and information will be uniform and readily understood. Compilations have been made by the Society of the nomenclature of illuminating engineering, of standard symbols and abbreviations in that field, of definitions of various types of illuminating glasses and nomenclature in that particular field. These compilations have meant cooperation and close association with other technical societies that has resulted in broadened knowledge and viewpoints and speedier benefits accumulating for the public good.

A booklet containing textbook material on the physics of light has been made available as an addition to, or in part as substitute for, the subject matter found in high school physics books.

As an educational feature, the Society has been sponsoring for several years a competition among student architects in cooperation with the Beaux Arts Institute of Design. Prizes are offered for the best solution of a project incorporating lighting as a part of the architectural design. This annual competition is accomplishing better each year the purpose for which it was designed—"to stimulate the interest of architectural students in the art and science of illumination and to foster a cooperative spirit between architects and illuminating engineers throughout the country."

Various permanent and technical committees made up from the membership work throughout the year in various lighting fields, conducting surveys, studies and tests, exchanging ideas and disseminating information. Space does not permit mention of all of these, but there are at least two of them which have such widespread and influential activities that they must not be omitted. One of these is the Committee on Lighting Service made up mostly of lighting service engineers and a few manufacturers' representatives. This committee provides information on the latest technical practise, publishes the Lighting Data Sheets and conducts the annual National Lighting Conference just prior to the annual convention of the Society.

The Lighting Data Sheets are issued on a subscription basis, 48 sheets being published each year, each describing some outstanding installation incorporating advanced lighting practice. Photographs, diagrams and illuminating engineering data describe in detail each particular installation for which special design may have been required. These sheets are circulated among architects, consulting engineers and others to whom this information may be helpful.

The National Lighting Conference is a forum in which lighting advertising, market analysis, utility lighting department operation and other subjects of interest to this group are discussed. At intervals, an exhibit of new lighting products is arranged to the interest and edification of those attending. To the utility lighting engineers and executives, the opportunity to exchange ideas, make contacts and keep up-to-date on information is invaluable.

Another committee of outstanding value is the School and Industrial Lighting Committee. This Committee has been responsible for the preparation of the School Lighting Standards and the Industrial Lighting Code.

Studies have been conducted by this committee in various industries to determine their respective lighting requirements for different processes and the most satisfactory and economical method of providing for that requirement.

A past-president of the Society visited his niece at a prominent girls college and noted the appalling lack of good lighting for safe seeing on the part of students. Learning of this condition, the School and Industrial Lighting Committee started a survey among colleges throughout the country and similar atrocious lighting was found to be generally prevalent. To meet the need of a satisfactory lamp to remedy the situation, the I. E.S. Study and Reading Lamp was designed which today provides safe, comfortable seeing in not only thousands of college dormitory rooms, but in rooms of homes

(*Continued on page* 78)

# Industrial Exhibits Predominate At Mississippi's State Fair

EMBODIED in a book, "State Fair," will be found a perfect expression of the popular conception of that time honored exposition—an affair of agricultural exhibits and contests, with ticklish rides and freakish people, attended by yokels with savings and sharpers after the savings.

It was a great surprise to many when the recent Mississippi fair failed to run to type and prize sows were slipped into the unobstrusive background. Industry predominated. Electrical exhibits, private and public, were abundant and in harmony with the rest of the program.

Despite the altered tenor of the program, farmers were plentiful, but if anything, they were more interested in the exhibits than even the urban dwellers. And, with rural electric lines penetrating further and further into rural areas, their interest is of increasing importance to the electrical trade.

Appliance dealers and electrical contractors will find it profitable to study such fairs and expositions. Through contact with the large number of farmers who attend such exhibitions, they may question farmers, learn their needs, and determine the appeals that should be stressed in their sales approach. The rural appliance and wiring field is still largely undeveloped but there is no doubt that the southern farmer will become a highly important customer of the electrical salesman.

"We have learned," said advertising man Robert E. Strong, "that the modern independent farmer is more discerning than his city neighbor. He has been stung so often that he is too wary to step without stirring the grass carefully. Before he buys, he ascertains his needs, inspects the competing products, and calculates his minimum expected income. Usually he does not buy on the installment plan."

Before the farmer is willing to part with his cash, he insists on performance. It must be proved in terms he understands. Technicalities fail to impress him.

A farmer stopped before a radio at one of the private exhibits. The attendant was explaining the fine principles of the instrument, only to be interrupted.

"What I want to know is: where will it reach, will it give a clear reception in the day, is it easily and cheaply repaired, will it get out of order easily, how much electricity does it consume, and is it easy to operate?"

So far, he seems more interested in recreational devices than in the multitude of labor saving implements being placed on the market. Labor is his cheapest commodity. He wants recreation at a reasonable cost after work is over.

The good salesman should be equipped to show him other means of putting the human energy to work with profit. Remember, when a man does not have a dime, a dime is a lot of money. The cost of electricity for one of the devices for a day may be less than a dime, but if the farmer does not see how he can reimburse himself for the dime, then buying the machine is uneconomical. (*Cont. on page* GR)

**Industrial exhibits predominated at the recent Mississippi State Fair. Exhibits of the Mississippi Power and Light Co. and General Electric Co. are shown here . .**

# Court Decision Affects Southern Projects

THE Supreme Court recently handed down unanimous decisions upholding the Public Works Administrator's right to make loans and grants to communities which have decided to build publicly owned power generating and distribution systems in the cases of the Alabama Power Company vs. Harold L. Ickes and the Duke Power Company vs. Harold L. Ickes. As these were considered test cases deciding the issue raised by utility companies the decisions will affect 61 similar projects in 23 states having a total construction cost of $146,917,808, and involving more than 100,000,000 man hours of employment.

The Supreme Court based its decision on the ground that the plaintiff power companies had no standing to question the validity of the proposed loans and grants because the competition of the municipalities was legal.

The suit of the Duke Power Company to prevent the advancement of approximately 2-½ million dollars to Greenwood County, South Carolina, which had voted to undertake construction of a county power generating and distributing system, was instituted in the federal court on November 7, 1934 after the utility had failed in state court attempts to block the county. The suit of the Alabama Power Company in the Decatur case was started in May, 1935.

The Duke case was decided adversely to the government by the District Judge in August 1935. The Circuit Court of Appeals for the Fourth District reversed this decision and held for the government in February, 1936. The Duke case was treated as a test case and action in all of the other pending cases was held up pending final decision by the Supreme Court.

In December 1936, the case went before the Supreme Court and was argued and an opinion was awaited. Instead of deciding the case on its merits, the Supreme Court handed down a per curiam opinion refusing to decide the case on merits and sending it back to the District Court for retrial because of certain technical errors in trial procedure.

This section of the PWA power program was blocked through court actions brought by utilities all over the country for nearly three years pending a final decision as to the legality of municipalities deciding that they wished local public control and ownership of their electric power and distributing facilities with the aid of PWA loans and grants.

Public Works Administrator Ickes announced that he had asked the Department of Justice to follow up the Government's victory in the Alabama and Duke power cases by securing the dissolution of all temporary injunctions that have been issued against the 61 PWA power allotments. The decision of the Supreme Court will be the controlling precedent in these other cases and it is expected that the injunctions will be dissolved as soon as required notice can be given. It is desired that all the projects should be under construction by early spring.

There are many public power projects which have not been thrown into litigation as yet, which will be affected favorably by the decision. Also utilities have withdrawn legal obstructions to other WPA power projects which have been completed and are serving their communities or are under construction.

Projects in the South affected by the decision are shown below.

**Southern Power Projects in Litigation**

| State & City | Loan | Grant | Total Est. Cost | KW Capacity |
|---|---|---|---|---|
| ALABAMA | | | | |
| Sheffield | | $ 52,000 | $ 230,000 | |
| Decatur | $ 269,000 | 81,000 | 350,000 | |
| Hartselle | 33,000 | 27,000 | 60,000 | |
| Russellville | 69,000 | 56,454 | 125,454 | |
| Guntersville | 48,000 | 39,272 | 87,272 | |
| Tarrant City | 181,000 | 148,091 | 329,091 | |
| Bessemer | 681,000 | 557,182 | 1,238,182 | |
| Courtland | 16,000 | 13,000 | 29,000 | |
| ARKANSAS | | | | |
| Paragould | $ 100,000 | $ 90,000 | $ 200,000 | 1,000 |
| KENTUCKY | | | | |
| Middlesboro | | $ 91,000 | $ 328,000 | 1,280 |
| MISSISSIPPI | | | | |
| Starkville | $ 64,844 | $ 53,055 | $ 150,909 | |
| Aberdeen | 66,000 | 54,000 | 120,000 | |
| NORTH CAROLINA | | | | |
| High Point | | $ 2,595,000 | $ 5,766,750 | 24,900 |
| SOUTH CAROLINA | | | | |
| Greenwood Co. | $ 2,195,000 | $ 657,000 | $ 2,852,000 | 15,000 |
| Santee-Cooper | 5,775,000 | 225,000 | 37,500,000 | 15,000 |
| TENNESSEE | | | | |
| Knoxville | $ 2,000,000 | $ 600,000 | $ 2,600,000 | |
| Lewisburg | 55,000 | 45,000 | 100,000 | |
| Columbia | 112,000 | 92,000 | 204,000 | |
| Chattanooga | 2,382,000 | 1,984,000 | 4,330,000 | |
| Memphis | | 3,092,000 | 6,872,000 | |
| Newbern | 33,000 | 26,000 | 59,000 | |
| Paris | | 135,000 | 300,000 | |
| Lenoir City | 29,000 | 23,727 | 52,727 | |
| Jackson | 364,000 | 299,500 | 663,500 | |
| Fayetteville | | 67,050 | 149,000 | |
| Clarksville | | 112,500 | 250,000 | |
| TEXAS | | | | |
| Lower Colo. R.A. | $10,500,000 | $ 4,500,000 | $20,000,000 | 67,000 |
| Liberty | 68,200 | 27,000 | 95,200 | 300 |
| Leonard | | 32,727 | 72,727 | 150 |
| Electra | 122,000 | 99,818 | 221,818 | 600 |
| VIRGINIA | | | | |
| South Norfolk | | $ 148,000 | $ 331,000 | 1,500 |
| TOTAL | $25,163,044 | $15,987,376 | $85,567,630 | 127,230 |

# Merchandising

IN THIS SECTION:
Free Utensil Sets Stimulate Range Sales
Plastics in the Appliance Field
Customers' Safety is Your Responsibility

### Water Systems Council Plans Extensive Campaign . . . .

FIVE times as many homes throughout the country were equipped for the first time with electric water systems during 1937 as were so equipped during the year 1933, according to a statement just issued by the Electric Water Systems Council. Whereas but 50,000 such systems were installed during 1933, the number of installations has steadily increased each year, and present indications are that the increase will be still further accelerated during 1938.

Motive power behind this steady advance toward better living conditions in rural homes is the Electric Water System Council, organized four years ago as a cooperative undertaking by Edison Electric Institute and a group of electric water systems manufacturers. Each year the Council has raised its goal as to the number of water systems to be sold, and each year it has extended and expanded its program in an aggressive merchandising campaign in order to achieve its new objective.

For 1938 the Council plans to increase its program on a broad scale. It will shortly present an extended outline of its proposed activities for the coming year in pamphlet form. The pamphlet will be available to dealers, ultilities and other local distributors. The present objective, adopted a year ago, is to place 1,500,000 electric water systems in rural and suburban homes in the five years from 1937 to 1941 inclusive.

---

### Lamp Improvement Contest

A contest for the design of table and floor lamps, that is intended to bridge the present gap between plain science and more beauty has been announced by its joint sponsors, the Illuminating Engineering Society, the American Institute of Architects, and the American Institute of Decorators.

The purpose of the Competition, according to the Program issued by its co-sponsors, is "to stimulate improvement in the design of portable lamps by requiring that the essential specifications of the Illuminating Engineering Society as well as the standards of professional designers of interiors be met in products that will reflect the latest scientific as well as esthetic advancement."

---

### Kitchen Modernizing Bureau Makes Plans For 1938 . . .

The program for 1938 and the three special activities of the Electric Range, Electric Water Heating and Household Refrigeration Sections of *Nema*, to be tied in with the Kitchen Modernizing Bureau operation, were subjects of major importance discussed at a meeting of the Executive Committee of the Bureau, held in Cleveland recently.

Ralph H. Jones, president of Ralph H. Jones, Inc., the agency selected to handle the special activities, gave an outline of the respective plans to promote the sale of electric ranges, water heaters and refrigerators, which received the general approval of the Committee.

Davis M. DeBard, of the Edison Electric Institute, and Carl M. Snyder, of the General Electric Company, were added to the Executive Committee.

Roger Bolin, of the Westinghouse Co., was appointed chairman of the Plan Committee. J. A. Sterling, Norge ivision of the Borg-Warner Corporation was added to the committee.

### Vacuum Cleaner Sales Reach All-Time Record in 1937 . .

Electrical vacuum cleaner purchases by American homes reached a new record high in 1937 that will prove to be 10 percent greater than 1936 and 12.5 percent above the next best year, 1929, when final figures are compiled.

The 1936 total was passed in November, 1937, and the figure for the year just closing will be almost 1,670,000, compared to 1,510,953 for 1936. The third quarter of 1937, traditionally the lowest of any year, was characterized by a volume 30.8 percent as great as the total for all 1936.

Increased adoption of vacuum cleaners has been hastened by three major stimuli, the redoubled consciousness of the importance of home health measures, fresh new attention to the styling and preservation of floor coverings, and the spread of rural electrification.

Use of cleaners is estimated to have reached a 70 percent saturation figure in the cities, 30 percent in the smaller communities and, of course, much less than that in farm homes. Replacements and expansion in the larger centers, continued growth elsewhere and rural household purchases in direct proportion to the spread of electrification will give the industry even greater totals in 1938.

---

### Colored Linoleum Tops Popular

Linoleum tops for kitchen cabinets and tables are rapidly gaining in favor. A new note observed recently is coral and lettuce green linoleum combined with white enamel cases. Another popular combination makes use of wine red and navy blue on oyster white oak. Delphinium blue is also popular.

# Plastics for Appliances

## Advantages of plastic materials result in many new applications in appliance field

By W. R. Allen

FEW new materials have gained such rapid acceptance in the manufacture of home appliances as the many varieties of synthetic plastic materials now available. More and more in the manufacture of molding compounds has the industry moved away from a single material or few materials, and today there are numerous variations and new materials created as a result, and a more extensive use to meet new conditions.

Although plastic materials have been widely used in many other industries, their characteristics fit them particularly for advantageous use in the electrical industry.

For example, in the mechanical refrigerator which utilizes a great variety of materials, ranging from paper to fused glass, and from glycerine resin to thermostat silver, synthetic plastics are now actually "number 2" refrigerator material, ranking second only to steel in variety and extensiveness of its uses.

Franklin E. Brill, of General Plastics, Inc., in a recent article in *Modern Plastics* magazine says, "First recorded use for plastics in refrigerators was a small cold control knob, but today a camera tour through any appliance showroom shows some twenty odd different plastic applications, many of them new.

"Among them: vegetable drawer fronts, crisper trays (covers), molded (and laminated) breaker strips, molded corner trim, name plates, shelf supports, knobs, interior light housings, thermostat covers, expansion valve housings, handles and hinge-caps, thermometer cases, door latches.

"Rapid though this growth may seem—most of it occurring in the last six years—it can be traced directly to the materials themselves rather than any intense promotion. For plastics would seem to have been invented especially for refrigerators, so well do they answer requirements. These synthetic materials have ideal properties: a clean sanitary appearance; a smooth, stain-proof and chip-proof luster; resistance to moisture, food acids and corrosion; they take intricate shapes economically, and are readily available in the large quantities the industry now requires.

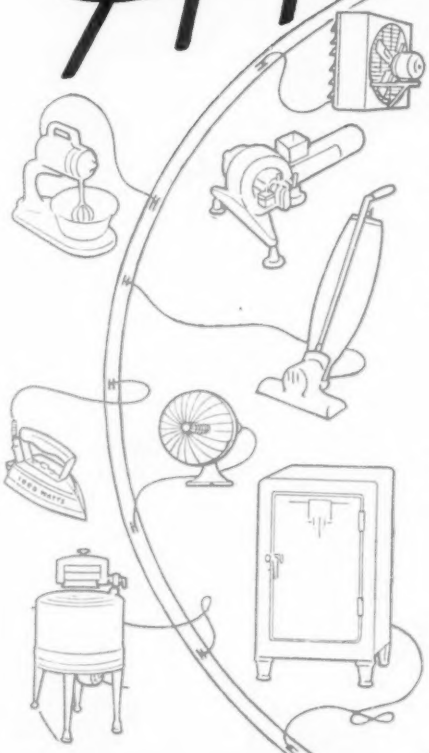
"Typical of the newer uses for plastics in refrigerator interiors are the front panels on vegetable drawers or crispers, which are molded entirely in one piece with recesses for metal handles. Con-

A wide range of plastic applications to the electrical appliance field are shown here: (1) Manning Bowman waffle iron with Bakelite trim and handles. (2) Lady Dover automatic iron also utilizes Bakelite for knob and handle. (3) Westinghouse Econo-Cooker utilizes plastic materials to good advantage. (4) Twenty parts out of twenty-five in the new Hoover vacuum cleaner are molded of plastics. (5) The Kadette Clockette radio is enclosed in a case molded of Fiberlon. (6) Molded Catalin and brass are combined artistically in this modern lamp of the Steele, Johnson and Co.

(Photos 1 and 2 courtesy Bakelite Corp.; 3, Westinghouse Elec. and Mfg. Co.; 4 and 5, Modern Plastics Magazine; 6, H. H. Foster.)

# IF YOU SELL-SERVICE or INSTALL *Appliances*

## You should know about this NEW device . . .



### *Eliminates many "false-alarm" service calls*

Today we find motor-driven and heating appliances of all kinds on so-called lighting circuits.

This increased load has resulted in an increasing number of service calls — caused by the circuit fuses opening NEEDLESSLY when motors start.

Such calls are wasteful and costly to everybody. User loses time and temper and often money when service is stopped.

Service man is dragged away from more profitable work.

Contractor or dealer loses if user kicks about paying full cost of call when only work done was to replace a fuse.

The Fustat stops this senseless waste. Its long time-lag keeps it from popping out needlessly on motor-starting currents — yet it protects like a fuse against dangerous cord shorts, grounded sockets, etc.

Thus by using a 15 ampere Fustat, an ordinary circuit can be given SAFE protection without incurring a lot of useless shutdowns and "false-alarm" service calls.

And the Fustat does more — it . .

### *Prevents user being robbed of protection*

Unlike ordinary fuses, the Fustat cannot be replaced with a penny or other such substitute for the fuse — or with a size too large to protect. In fact, sidetracking the Fustat in any way is practically impossible.

The Fustat protects the user against anyone unwittingly creating a fire or personal injury risk thru haphazard practices. Only a willful and deliberate attempt can destroy safe protection when a Fustat is used.

### *Makes for better business*

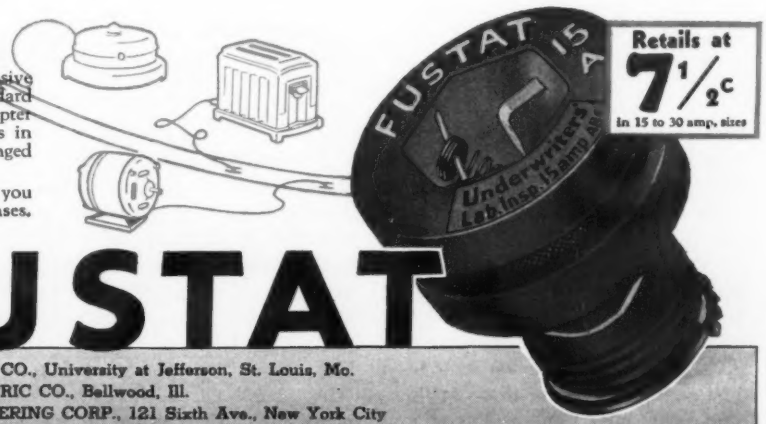
Using Fustats for circuit protection is just good business — for what device other than the Fustat can permit adding more appliances to present circuits . . . yet positively stop user from overloading circuits . . . protect against dangerous cord shorts . . . eliminate needless blows and service interruptions and . . .

make SAFE protection REMAIN SAFE

**The Fustat fits present fuseholders**

Thru the use of an inexpensive adapter, the Fustat fits any standard Edison base fuseholder. The adapter screws in like a fuse and locks in place. The Fustat may be changed in the regular manner.

On new jobs, when buying panels, switches, etc., you can specify that they be equipped with Fustat bases.

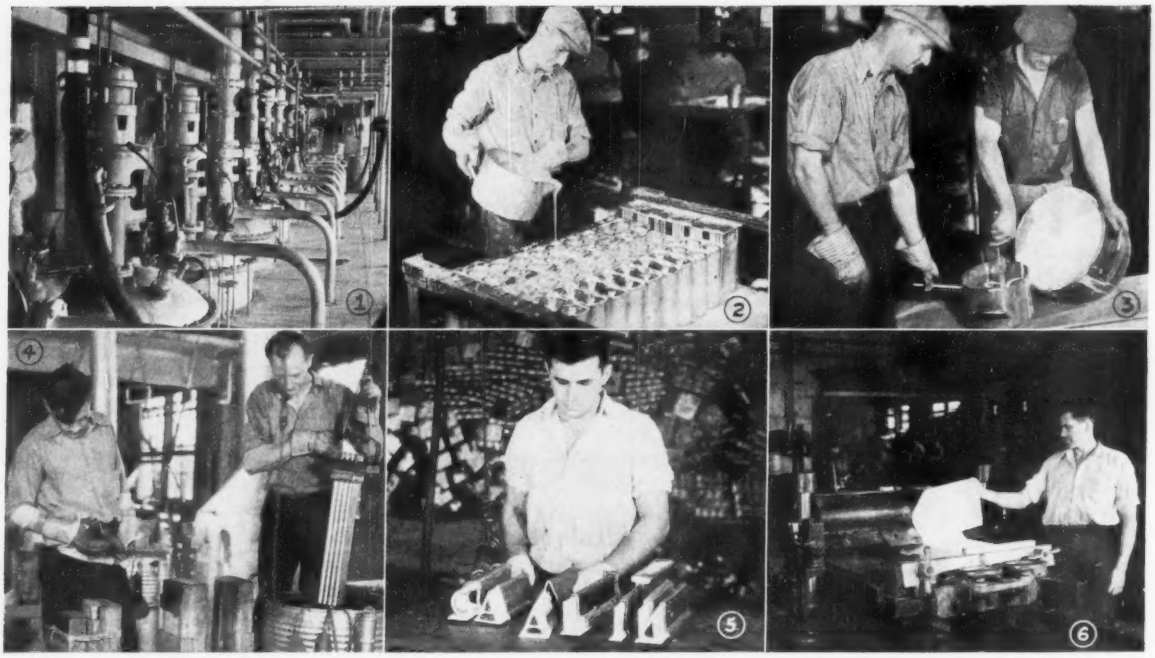



**Retails at 7½c** in 15 to 30 amp. sizes

# The FUSTAT

For full information write to any of these firms—

BUSSMANN MFG. CO., University at Jefferson, St. Louis, Mo.
JEFFERSON ELECTRIC CO., Bellwood, Ill.
KIRKMAN ENGINEERING CORP., 121 Sixth Ave., New York City
NATIONAL ELECTRIC PRODUCTS CORP., Fulton Bldg., Pittsburgh, Pa.
UNION INSULATING CO., 277 Broadway, New York City



Although the term "plastic" may be applied to any material that can be molded or pressed into a desired shape, in industry the term applies to a wide range of synthetic materials classified according to their chemical nature and the way they are made. Most of the more common applications are made from materials of two outstanding groups—the synthetic resins and those of the cellulosic type. The photographs above show various steps in the manufacturing process of Catalin which is known as a cast phenolic resin.

(1) The phenol and formaldehyde are cooked in this battery of nickel lined kettles until they become the consistency and color of honey. The kettles are loaded and observed from the balcony shown here and later emptied from a lower floor. Each kettle has a 3,000 pound capacity.

(2) Filling the molds. Those shown here form cylindrical tubes about twelve inches long. These are later sliced to the required thickness by fabricators, much as cheese would be, to from bracelets and many other consumer products. Catalin is worked by fabricators with practically the same tools and technique as that employed in working wood or soft metals.

(3) The mottler blends two or more colors exquisitely using his eye only to measure the mix. The pattern of mottling changes as the mottler forms stars, triangles, straight parallel lines of other figures with his rod.

(4) Molds into which liquid catalin is poured to form many diversified shaped castings are quickly formed by dipping steel arbors (patterns of the form to be molded) into molten lead. The lead is removed by stripping and forms the mold. Shown here an arbor is being lifted from the lead pot while the molder's helper inspects a mold that has just been stripped from the arbor.

(5) The lead molds are filled with liquid catalin and cured in ovens (vulcanizers) until the catalin becomes hard. The molds are then removed and the castings are driven from the molds with pneumatic hammers. Molds are only used once and then remelted.

(6) Sheets are usually cast between glass panes but when special thicknesses are required on a small production job they are sliced from blocks that have been partially cured to hardness. In this state catalin is very much like rubber. The slices are returned to the ovens, where their curing continues until they are hard.

tributing much to the clean and attractive appearance of the interior, these panels withstand years of handling without wear or damage to the surface lustre, feel pleasant and non-metallic, and are light in weight. Similarly, several recent models use molded serving trays as covers for crispers or defroster dishes, where they perform both tray and cover jobs perfectly, resisting soap, water, acids and chipping, and being non-resonant in nature, reducing clatter and noise as well as damage to themselves when banged on metal crisper or drainboard."

The adaptation of plastic materials to other appliances has been just as rapid. Among these applications are heat control knobs and handles on electric roasters, molded cabinets for portable radios and clocks, heat control and handles for electric irons, handles and other trim for waffle irons, percolators and similar appliances, molded lamp bases of various types, and a wide range of other electrical goods such as telephone sets, radio controls, etc.

### An Outstanding Application

Of outsanding interest in the application of plastic materials to modern electrical appliances is the adoption of this material for use by the Hoover Company in their new line of cleaners. The motor hood, motor case, cleaning tool parts, ventilating fan, agitator end, bag connector, wheels, and many other small parts—in fact twenty parts out of twenty-five of this new Hoover vacuum cleaner—were molded of plastic materials.

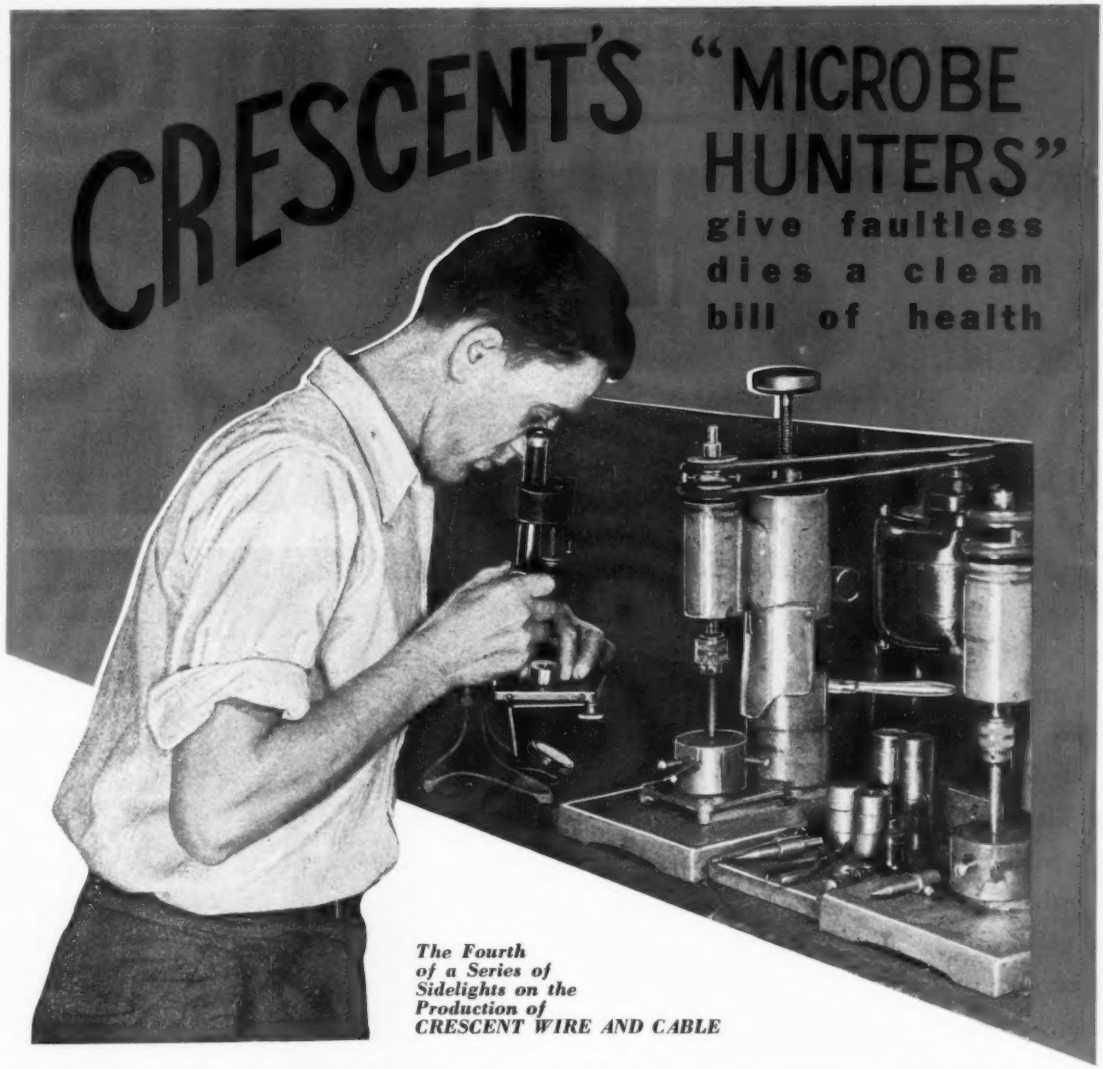
While plastics have been used for housings on adding machines, calculators, electric meters, and similar items, their adoption by the Hoover Company for the hood on their One Fifty machine was definite evidence of the trend toward these materials for structural parts with strength and other qualifications distinctly their own. Molded plastics assure accurate assembly and alignment in close dimensional tolerances, reduce the weight of the piece and finishing cost, and give it a permanency that could not be attained in any other way.

It is difficult to even anticipate the extent of the effect which plastic materials may have upon the appliance business. The plastic industry is in a state of change and is constantly expanding its scope and increasing its magnitude.

VARNISHED CAMBRIC • RUBBER POWER CABLES • BUILDING WIRE • RADIO WIRES • SIGNAL CABLE • FLEXIBLE CORDS • LEAD • ENCASED AND PARKWAY CABLES • ARMORED CABLE

CRESFLEX NON - METALLIC SHEATHED CABLE • SERVICE ENTRANCE CABLE • MAGNET WIRE • BARE WIRE

# CRESCENT'S "MICROBE HUNTERS" give faultless dies a clean bill of health



*The Fourth of a Series of Sidelights on the Production of CRESCENT WIRE AND CABLE*

Eagle eyes peering through this binocular microscope can detect the most minute flaws that tend to mar the finish or shape of dies used in drawing copper for Crescent Wire and Cable. And close at hand, is some of the precision sizing and polishing equipment necessary for the shaping and maintenance of tungsten carbide dies. Such close control over all forming tools is a standing "must" order in the Crescent plant to insure accuracy and uniformity of wire and cable sizes.

CRESCENT
INSULATED WIRE & CABLE CO. INC
TRENTON, NEW JERSEY

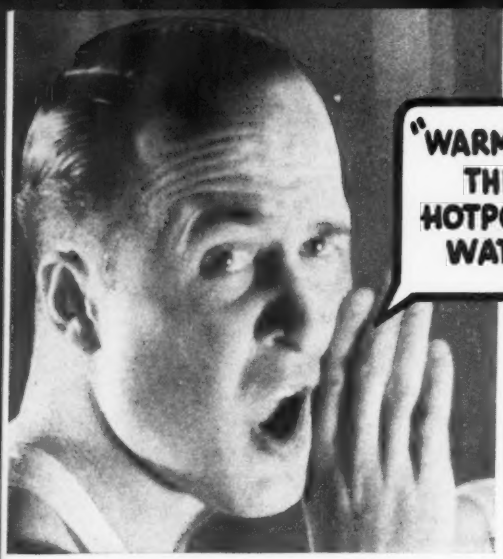
SOUTHERN REPRESENTATIVES

ATLANTA, GA.
Edgar E. Dawes
A-4 Rhodes Bldg. Annex

DALLAS, TEX.
Royal Smith
912 Commerce St.

NEW ORLEANS, LA.
Paul Hogan, Jr.
1907 Jefferson Ave.

CRESCENT ENDURITE SUPER • AGING INSULATION • WEATHER-PROOF WIRE



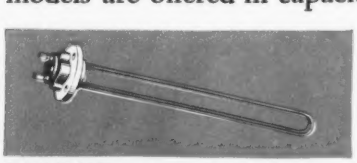

# FROM COAST TO COAST UTILITIES ACCLAIM HOTPOINT WATER

EVERYWHERE, forward-looking utility companies are launching aggressive water-heating campaigns earlier than ever this year. They know an early start means more sales—greater profits—every month of the year. Why don't you, too, start your campaign now?

Many utilities have planned, and are conducting, special drives to sell their present electric range users. They're increasing KW hour sales and revenue with a minimum of investment. Hotpoint's special sales promotion materials will help you sell this profitable market.

Take advantage of the sweeping public interest in electric water heating. The modern electric water heater is the fastest growing domestic appliance in the industry. Everything points to the biggest year in water heater history. It's an opportunity you can't afford to neglect.

Whether your requirements are for off-peak or continuous service, Hotpoint's complete line offers a model to fit your needs. Hotpoint Vogue and Master models are offered in capacities from 1 to 140 gallons—a model for every demand. See the complete line. Build revenue and good will with Hotpoint Electric Water Heating in 1938!



**CALROD**—Hotpoint's famous heating unit is immersed directly in the water within the storage tank. Delivers heat directly into the water.

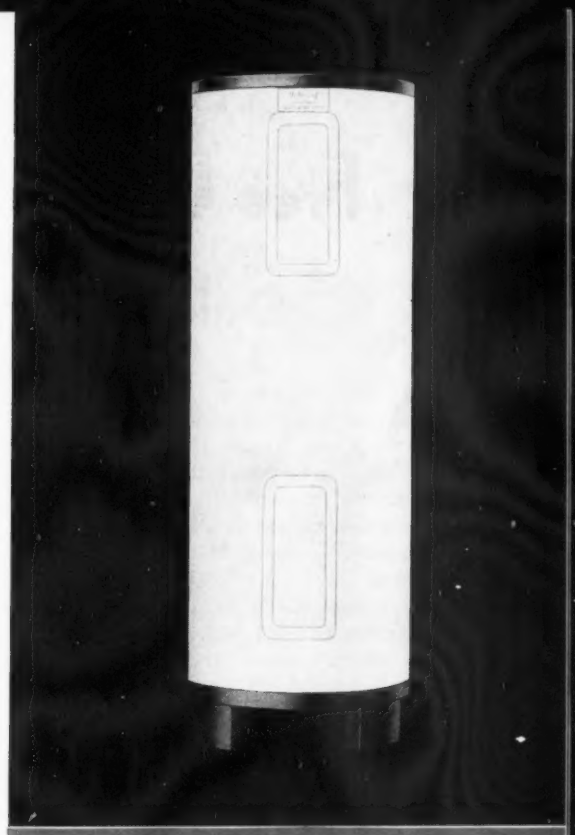
**THE VOGUE**—Hotpoint's smartly-styled rectangular type water heater, combining modern beauty of design with Hotpoint economy and efficiency. Adaptable to kitchen, bathroom or basement installation.

**EDISON GENERAL ELECTRIC APPLIANCE CO., Inc.**
**5614 West Taylor Street, Chicago, Illinois**

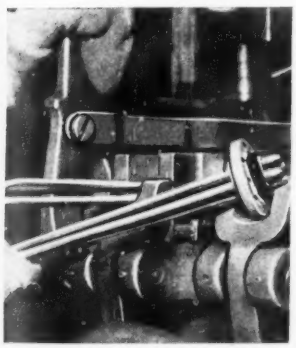
# COAST...CANADA TO THE GULF OPPORTUNITIES OF...

# ELECTRIC HEATING

## SMARTLY-STYLED...
## ENGINEERED FOR SATISFACTION



**THE MASTER**—Hotpoint's popular round-style water heater for homes which prefer this type of design. Offered in a wide variety of capacities to provide dependable hot water service for all needs.



**SEALING CALROD UNIT WITH BAKELITE**—One of the precision manufacturing operations insuring perfection of the Hotpoint Water Heater. Calrod is an exclusive feature of Hotpoint Water Heaters.

**MATERIALS TESTING LABORATORY**—(*below*) Here, all materials to be used in the manufacture of Hotpoint Water Heaters are subjected to severe and rigorous tests to protect quality.

**USE THESE NEW HOTPOINT SALES HELPS**

New newspaper advertisements, direct-mail, display material, slide films—a variety of sparkling sales helps aimed right at the purse strings of your prospects.

**Hotpoint**

**AUTOMATIC ELECTRIC WATER HEATERS**

ELECTRIC RANGES • REFRIGERATORS • WASHERS AND IRONERS • SINKS AND DISHWASHERS

# Free Utensil Sets Stimulated Range Sales for this Knoxville Dealer

By R. P. McLeod

ALMOST successful range sales campaign was promoted recently by the East Tennessee Electric Company Retail Store, in Knoxville, according to R. D. Anderson, manager, by offering a 15-piece Wearever electric range utensil set free with each range purchased.

Extensive newspaper advertising which carried pictures showing the electric range utensils and their retail price, brought satisfactory returns. In addition to this, a short housekeepers' radio program at nine o'clock used for six consecutive days every other week, which presented popular music along with announcements about this unusual electric range utensil offer and a brief discussion of the advantages of the range, gave suitable publicity to the campaign. An effectively decorated window display showing ranges and Wearever electric range utensils at the companys downtown store in its prominent location served to attract passersby.

While electric ranges as low in price as $100 (installed) were included in the sale, it has been interesting to note that, so far, 40 per cent of the ranges sold were priced from $200 up, indicating that those who buy the more expensive merchandise have a better understanding of how important scientifically planned utensils are in the efficient operation of an electric range.

B. W. Tansill, district manager of the Wearever Aluminum Co. for the southeastern states, gave his heartiest cooperation in this sales promotion plan. He and Mr. Anderson recognized that a tie-up between the electric range dealer and the utensil manufacturer was a decided advantage to both firms because electric ranges are most efficient when utensils of the correct contour and composition are used, and Wearever utensils work best when used on an efficient electric range. Correctly constructed utensils, made of aluminum, assure quick heating. As they are designed to cover the entire surface element, they allow no loss of heat around the edges of the cooking vessels. Aluminum is so easily cleaned that it makes the ideal utensil for the modern kitchen where sanitation is stressed so strongly.

A clever plan of Mr. Anderson's, used in promoting additional sales after one piece of electric equipment has been purchased, consists of converting the old contract on the 24 months plan into one of 36 months duration, canceling all previous carrying charges, deducting the amount paid so far from the total and charging only 75c a month for each month the original contract ran. New carrying charges are then worked out for the combined price of the two or more electric appliances. By extending the period for the payments, the installments amount to but little more than they were originally. This encourages the housewife to change her old fashioned kitchen into a modern all electric one.

The customer's argument about the electric bill being boosted by buying additional electric equipment is answered by explaining the Tennessee Public Service Company's promotional rate which decreases with increased use of electric service.

Another example of the excellent cooperation of the Tennessee Public Service Co. is the service which their staff of capable home economists give free to the customers of every electrical dealer in Knoxville. Any information on the operation of the range, refrigerator, special recipes, etc., is supplied graciously as well as gratuitously to the housewives by these home-

(*Continued on page* 24)

This window display presented the special range offer to passersby

# WE WANT DEALERS WHO UNDERSTAND *Quality* TO HANDLE PREMIER!

To dealers who want to get their vacuum cleaner business back on a quality basis . . . and that means a profit basis . . . Premier has an interesting offer.

We have a training method that will enable you to compete successfully against the "price, price, price" competition which you find everywhere today.

Is it worth while? We would like to submit the record of what Premier dealers are doing to show you whether it is or not. Premier quality is enabling them to make money. Premier quality enables you to offer price appeals that are real bargains! Premier is embarking upon the most compelling advertising program in Premier history. You ought to get the story. Write now for full details and complete explanation of our "Training for Money" offer.

*Full page in four colors featured in the American Weekly starting April 24.*

**PREMIER PR30**
**Regular Price**
**$49.50**

**In Premier's Special Spring Housecleaning Offer**
**$39.50**
**with old cleaner**

*Prices slightly higher west of the Rockies*

*Get your name listed in the American Weekly ad and Profit with Premier.*

**PREMIER** ONE OF AMERICA'S LARGEST-SELLING AND BEST-KNOWN VACUUM CLEANERS

*Electric Vacuum Cleaner Co., Inc., Cleveland, Ohio*

# How Safe are Customers in Your Store?

## An attorney discusses the dealer's responsibility for customer safety

By C. R. Rosenberg, Jr.

THE NEXT person who comes into your store may be the one who will take most, if not all your profits for the year, as the result of an accident while on your premises. He may be your best customer, or your most troublesome one, or perhaps he's somebody's collector or salesman. It makes no difference. By being open for business, you are silently "inviting" people into your store.

A merchant is responsible for the safety of his business invitees while they're on the store premises. If any invitee is hurt as a result of any "defect" in the place, the proprietor must pay the damages. That's the law, and the sums that injured invitees have collected from hapless merchants are startling.

These "damage" disasters are always unexpected. The "board-on-the-step" case is a good example: A woman customer walked up the entrance steps and into a store. In about a half-hour she came out and walked down the same steps. Halfway down she fell over a board lying loose on one of the steps and was badly hurt. At her subsequent suit against the proprietor it was shown that the board was there when she walked safely up the steps and that its presence was therefore known to her. Hence, it was urged, her injuries were the result of her own carelessness in failing to avoid the board on her way out. Despite these facts, the court upheld a substantial damage verdict against the merchant.

A somewhat similar case was that of the customer who upon entering a washroom connected with a store, was hurt by falling over a hole in the floor. He had used this washroom many times and was presumably familiar with it, but the owner was held responsible for the customer's injuries. The court, in commenting on the contention that the customer would not have been injured if he had looked where he was going, observed that a person is not obliged to go through life watching his next step. Generally, a customer or other business visitor in a store need not be as careful about his "next step" as he would be on the street; he has the right to assume that the place is safe for his use. Virtually, a merchant guarantees that his store is safe for those who enter it.

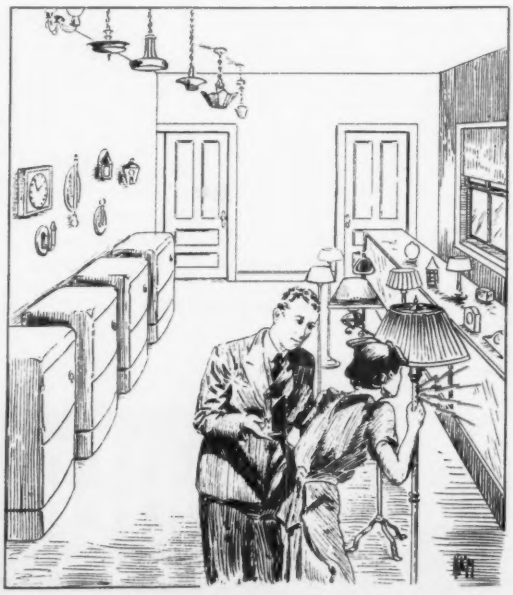
Such a small thing as the misplacing of stock, even temporarily, may result in a disastrous damage suit. In one store a narrow passageway was the only access that customers had to a department in the rear of the building. A customer walked through this passageway safely and made some purchases. Coming back through the same corridor, he fell over a box that a clerk had left there while the customer was in the rear department. A large verdict against the merchant for the man's resulting injuries was allowed on the ground that they were the result of the clerk's negligence.

A merchant cannot escape liability for a customer's injury by showing that the damage was caused by the negligent act of an employee. The boss is supposed to have control of his employees and he's responsible for the consequences of the things they do *in the course of their employment.* Ironically, the employer is responsible for injuries to invitees even when they are the result of an employee's disobeying the employer's instructions. It's not enough, says the law, for an employer to give instructions intended to avoid injury to his business invitees; the burden is on him to see that those instructions are carried out.

Loose and decayed floor boards, rotted or insecure steps and stairs, holes and rough edges in floor coverings are frequent sources of damage suits. So also are fixtures, stock and equipment so placed as to constitute a hazard to customers and others. Boxes, tools and items of stock, unless carefully arranged, have a habit of toppling over and injuring bystanders. Equally disastrous is the falling of an item onto the floor used by customers. Before the thing is discovered, someone trips over it and is hurt.

A merchant's responsibility for the safety of his invitees includes not only his store building, but also all walks, paths, ramps, steps and other approaches over which he has control. Since invitees are impliedly invited to use these avenues of access, the proprietor must keep them free from all defects that might cause damage.

(*Continued on page* 78)



Injuries are costly even though infrequent

# KITCHEN-PROVED!
# WESTINGHOUSE *Electric* RANGES

COOK FAST — COOK BETTER — SAVE MONEY

## NO OTHER Electric Range offers the Selling advantages of these two exclusive Westinghouse features

The kitchen is where you use it. The kitchen is where we proved it. Now the certified *Kitchen-proof* is in — from 103 typical U. S. homes. It's proof that the COROX ECONOMIZER UNIT and the WESTINGHOUSE SUPEROVEN *cook fast, cook better, save money!*

**STEP OUT TO LEADERSHIP**

**with the Most Valuable FRANCHISE in Range History!**

***You'll Sell More and Make More with This "Hot Line" in 1938 Because . . .***

1 When you sell a Westinghouse Range you *know* that the "bugs" are out — that your profit isn't dribbled away in costly service calls. YOUR PROFIT STAYS IN because Westinghouse — with 24 years of electric range experience — knows how to build ranges *right*.

2 The 10-model Westinghouse line is COMPLETE — a model for every home, a price for every purse. You sell *profitably* in *every* price class.

3 *Kitchen-proved* features — COROX ECONOMIZER and the SUPEROVEN — make selling easy because they give the superperformance women demand today. And the *Kitchen-proved* facts are turned on your prospects with full force through a powerful national advertising program.

4 You skim the "profit-cream" because the exclusive Local Proving Kitchen Plan is punch-packed with localized advertising and backed by every kind of promotional help.

5 Sign nothing — promise nothing — until you have seen the 1938 Westinghouse *Kitchen-proved* Ranges, the ranges that SELL FAST . . . SELL BETTER . . . BOOST PROFITS.

Write or wire Dept. 8108, Westinghouse Electric & Mfg. Co., Mansfield, O., or get in touch with your Distributor today for full details about the Westinghouse Range Franchise.

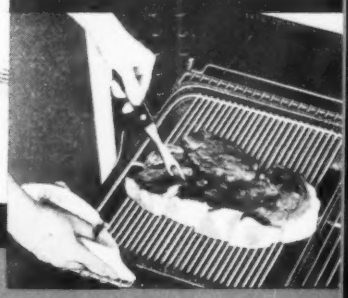
**1**

**COROX ECONOMIZER UNIT**

Wipe it with a damp cloth and IT'S CLEAN! Only Westinghouse offers this 4-Heat COROX ECONOMIZER with one-piece solid top. It gives the *right* heat for every cooking operation, including a super-economical "simmer," using 60% less current than "low" on ordinary units.

**2**

**WESTINGHOUSE SUPEROVEN**



Perfect broiling is easy — and smokeless — in a WESTINGHOUSE SUPEROVEN. The convenient top heater ends stooping and squatting. Biscuits in 10 minutes — *from a cold oven* start! Only the scientifically balanced heat gives perfect baking so fast. Exclusive Heat-Evener insures juicy, tender roasts.

***SWING AHEAD***

**with Westinghouse in 1938!**

# Westinghouse *Kitchen-proved* Ranges

# Proved

## The World's Highest Authority on Product Performance

...IS ANY ONE OF YOUR CUSTOMERS Probably she never saw a real, live electrical engineer in action. She never went through a testing laboratory. But she knows what a product for which she paid her good money should do IN HER KITCHEN OR HOME.

All over the world these Westinghouse users have been putting Westinghouse appliances through the most rigorous home test — practical operation under all the ordinary and extraordinary conditions of actual use. They have recorded their experiences, their savings, their operating expenses, their suggestions, EVERYTHING! These records — these facts, all unadorned, are "Kitchen-proved" SELLING FACTS, Westinghouse retailers are using with truly amazing results.

*Actual users* give Westinghouse retailers their powerful selling story — give Westinghouse advertising its pertinent and penetrating messages. These users, in effect, are writing the booklets, the sales manuals, the product literature. After all, THEY ARE THE WORLD'S HIGHEST AUTHORITIES ON PRODUCT PERFORMANCE — AND EVERY PROSPECT KNOWS IT!

If this modern, sensible way of testing and selling electrical merchandise appeals to you, ask your Westinghouse man for additional facts; or write direct to Dept. 844, WESTINGHOUSE ELECTRIC & MFG. CO., MERCHANDISING DIVISION, MANSFIELD, O.

EVERY HOUSE NEEDS **Westinghouse**

# ...where they're used..

## ...by the women who use them!

*Kitchen-proved*
Electric Refrigerators

*Kitchen-proved*
Electric Ranges

*Home-proved*
Electric Water Heaters

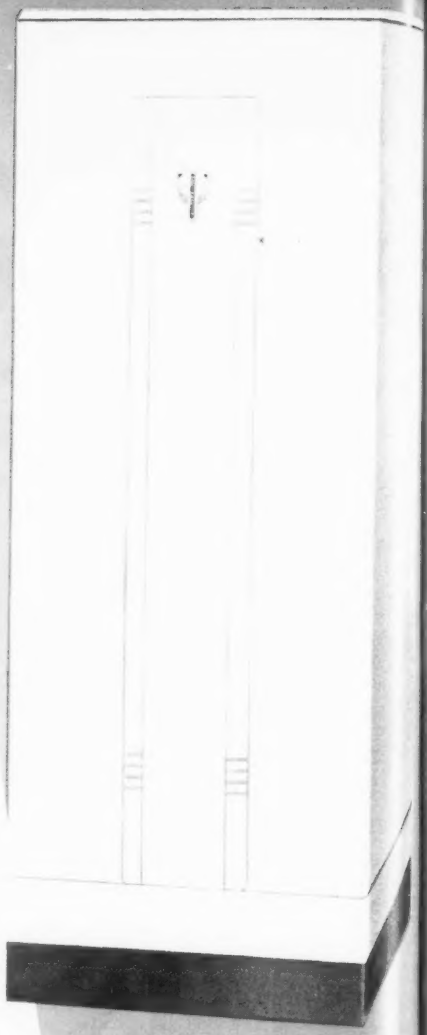
*Kitchen-proved*
Electric Dishwashers
Electric Roasters

*Home-proved*
Electric Washers
and Ironers

# ...The Line of Least Resistance

# A NEW SLANT

## ON *Electric* WATER HEATER SELLING



REAL HOT WATER SERVICE

NOW *HOME-PROVED*

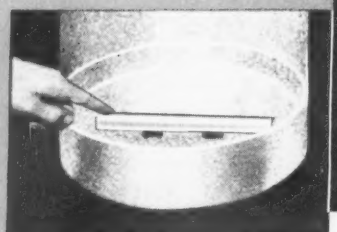
**EASY QUICK CHEAP**

JUST LIKE ELECTRIC LIGHT!

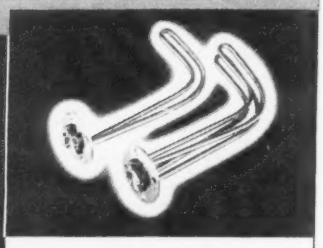
The home is where the water heater is used. And from the home comes sales-making proof of Westinghouse performance! Typical American families checked cost, performance, convenience . . . in their own homes. Now certified reports provide a profit-building selling story: *Home-proof* that Westinghouse Water Heaters give real hot water service — easy, quick, cheap — just like electric light!

Find out how A NEW SLANT will help you! See your nearest Westinghouse man, or write Dept. 8100, Westinghouse Electric & Manufacturing Co., Merchandising Division, Mansfield, Ohio.

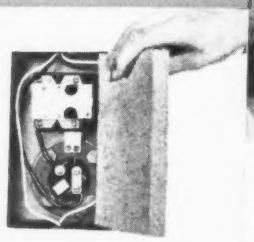
**THIS EXCLUSIVE COMBINATION OF HOME-PROVED FEATURES MAKES IT EASIER TO SELL WESTINGHOUSE ELECTRIC WATER HEATERS AND BOOST YOUR PROFITS!**



Scientific baffle keeps inrushing cold water at bottom of tank, prevents it from cooling water already heated.



Exclusive Corox Units transfer every bit of heat directly into the water — heat more water for less money.



Superaccurate thermostats turn electricity on when water is cool; off when it's hot. Save money, end work and worry.

Extra-thick Palco Wool insulation keeps water hot for longer periods while no electricity is used. Cuts water heating costs.

W WESTINGHOUSE ELECTRIC

# Westinghouse *Home-proved* Water Heaters

## Oklahoma Dealers Hold Four-Day Exhibit . . .

ELECTRICAL dealers of Oklahoma City, as well as the Oklahoma Gas and Electric Company, made effective use of promotional displays during a recent four-day home furnishings exhibit in Oklahoma City.

The exhibition took the form of an ideal street of homes and neighborhood business houses. The electrical exhibits included both appliances and modern lighting.

The Oklahoma Gas and Electric Company's display in the "business district" afforded visible proof of the desirability of modern lighting. The display consisted of a tastefully furnished room containing two complete lighting systems, one representing obsolete methods and the other, the most modern. Lighted alternately, the two systems presented a most convincing argument for modern lighting methods by a contrast that was completely obvious to the exhibit visitors.

Besides the appliance and utilities displays, there were eight completely furnished bungalows ranging in period from 18th Century English to the Mode Moderne. All used lighting and fixtures styled according to the prevailing furniture motif.

Among the electrical dealers represented in the exhibits were the Oklahoma Electrical Supply Co., the Gaddis Electrical Co., the Cardwell Electric Co., the Weatherbee Electric Co., the Carpenter Olsen Electric Co., and the Capitol Electric Co.

The cooperative exhibit, which attracted slightly more than 50,000 visitors, was sponsored by the *Oklahoma News* under the guidance of Charles L. Nicholson, business manager.

**Oklahoma City's recent four-day home furnishings show took the form of a model street of homes and business establishments . . . .**

### Suggestions To Assure Sound Credit Extension . . . . .

Ten basic requirements necessary to assure sound credit extension during 1938 were presented recently to the National Retail Dry Goods Association by J. Anton Hagios, manager of the credit management division of the Association.

Although prepared from the point of view of the department store, these requirements relate particularly to the sale of appliances and similar merchandise sold on installment plan and will apply to a great extent to the credit operations of many electrical appliance dealers. The ten suggestions are as follows:

1. The need for continued downward revision of maximum terms on all types of installment sales with maximum terms of twenty-four months as the goal on such major items as electrical appliances, oil burners, plumbing supplies, etc.

2. A comparable reduction of terms on a graduated scale for all other commodities sold on the installment plan—such scale to be based on the sales price and not to exceed the useful life of the article involved.

3. That a sufficient down payment be secured—not less than 10% —to create in the customer a sense of ownership and a desire to retain merchandise bought on the installment plan.

4. To obtain a carrying charge (½ of 1% a month on the original unpaid balance) on all types of installment selling, including that on soft goods.

5. To undertake a more selective job in approving credit risks and to investigate every new applicant for credit through credit bureaus and reference.

6. To avoid the extension of credit where income is known to be indefinite, where employment is temporary, or where the applicant is on relief.

7. To scrutinize closely credit limits and prevent over-buying where the capacity to pay on the part of the customer does not justify it.

8. To follow up collections diligently, on an individualized basis if necessary, to insure a satisfactory collection percentage.

9. To educate the chronically slow-pay customer, by personal interview where possible, to cultivate the habit of paying promptly.

10. To eliminate generally the hazards which crept into the retail credit structure in the last three years and to effect a gradual return to normal conditions in credit terms and the quality of credit risks, and to combat unsound credit practices which have been fostered under the influence of unsound federal government encouragement.

### Washer Manufacturers Enjoy Fifth Million-Unit Year . . . .

The members of the American Washing Machine Manufacturers' Association produced and sold more household washers and ironers in the first ten months of 1937 than in any full year of the industry's history, with the single exception of 1936.

The total for 1937 will be close to 1,840,000 or within less than 5 per cent of the 1936 all-time high, which was 1,909,416 washers and ironers.

The year just closed is the fifth successive 1,000,000-washer year the industry has enjoyed.

In the face of the greatest and most varied inter-industry competition ever known for the consumer's favor, 41.9 percent of all washers shipped in the January-October period were in classes retailing at more than $70, with the figure hitting 46 percent in October.

## Policies That Built Rural Business . .

EIGHTY per cent of the people to whom we sell washing machines, refrigerators, radios, and other home appliances are people who have never been solicited or approached by anyone from our firm. They just come in and buy these major appliances as they would buy a suit of clothes or any other article," reports the proprietor of an electric service firm in southern Alabama, who has established a business out of all proportion to his town and one that results in a net profit that would satisfy almost any but the most ambitious person.

In his many years of retail selling, this dealer has learned that when a buyer comes in of his own accord, chooses what he wants and closes the deal, the transaction cannot but be a profitable one for the dealer. It is toward increasing this class of customer that he devotes most of his effort and planning.

Of course, the company and its products must be brought to the attention of the prospective purchaser in some manner and this is accomplished by using every possible opportunity for publicity for the firm and the nationally advertised products featured.

He is a strong believer in offering only standard, nationally advertised lines. He has found that he encounters a great deal less sales resistance in selling goods that are already well known to his customers and finds that it is much more profitable to sell such lines than others not so well known, even when the latter carry a larger discount.

Names of these nationally known appliances are prominently displayed in the window and store displays and are mentioned in all advertising. In many cases, he has found that customers are drawn to his store by this policy because it gives them a feeling of confidence.

The most effective advertising, he believes, is screen advertising in the local motion picture theater. This service costs him $14.75 a month and it keeps a large portion of the local citizens informed of the fact that he sells the appliances that they see advertised in almost every magazine and newspaper.

Another type of advertising which he has found to be particularly effective is a small display advertisement on the first page of the local weekly newspaper which ties in with local sports events.

A policy which has helped to a great extent in bringing in unsolicited prospects to the store is that of rendering the most satisfactory service possible to every new customer. It is no exaggeration to say that he spends far more time in thought and effort in satisfying his customers and keeping them satisfied than he does in selling them in the first place. Of course every satisfied customer may be depended upon to mention his satisfaction to several friends which invariably results in an increase in "walk-in" prospects.

"The successful merchant, the one who gets results and makes the steady profits," says this dealer, "is the man who builds a reputation for selling only the best merchandise at a price that is right; and who refuses to sell anything until he knows it is good. We make it our policy to offer a customer only the appliances that we would buy ourselves if we were in his place and had the knowledge of electrical merchandise that we have acquired."

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### EHFA Closes New Contracts With Membership Corp. . .

Electric Home and Farm Authority announced recently that contracts had been closed with the following southern electrical cooperatives: Upson County Electric Membership Corporation, Thomaston, Ga.; Cherokee County Electric Membership Corporation, Center, Ala.; Pitt & Greene Electric Membership Corporation, Farmville, N. C.; Caldwell Mutual Corporation, Lenoir, N. C., and Hill County Electric Cooperative, Inc., Itasca, Texas.

These contracts provide that the Authority and the utilities will cooperate in financing the sale of electrical appliances.

Added to the list of appliances eligible for financing through the E.H.F.A. are the vacuum cleaners manufactured by the Progress Vacuum Corporation and the Sweeper-Vac Company.

### Campaign Solves Radio Trade-In Problem . .

A successful campaign to eliminate the radio trade-in problem is being conducted by the San Diego Bureau of Radio and Electrical Appliances, according to J. C. Chamberlain, secretary. The campaign includes the presentation of the argument that every home needs more than one set, and advertisements of participating dealers include offers to recondition and reinstall free any radio the owner may possess, with the purchase of a new 1938 model.

"Two radios for the price of one," is the slogan used in the advertising with the suggestion that the reconditioned set be given to the children, old folks, or the maid. Another suggestion is to present the old set to some institution. So far the plan has worked fine. Of course, where the old set costs too much to recondition, the dealer may find it advisable to turn down the deal or make a trade from among his own stock of used radios.

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### Free Utensil Sets Stimulate Range Sales In Knoxville .

(*Continued from page* 16)

making experts. This is of inestimable value to the dealer in satisfying his customers.

The personnel of the East Tennessee Electric Co., include one floor man who is an expert salesman, another efficient employee who does the office work as well as floor selling, and ten outside salesmen who work individual territories by canvassing, following up leads, etc.

Many of the salesmen's prospects are persuaded to come to the store to inspect the complete modern electric kitchen located on the balcony. There, comfortable chairs and a table provide a place where terms can be discussed confidentially. Such a kitchen makes for ensemble selling as it did the other day when Mr. Anderson sold over $700 worth of electric equipment to one prospect.

No small percentage of the store's patrons come from the people passing the store who pause to inspect the window displays and are attracted to the interior by its pleasant and interesting arrangement.

# Contracting

IN THIS SECTION:
Advertising Sells Air Circulating Units
Industrial Modernization
1937 NEC Requires "T"-Rating Switches

## Plans For Florida Meeting Near Completion . . .

ANTICIPATING one of the most successful meetings ever held by the electrical industry in Florida, officers of the Florida Association of Electrical Contractors and Dealers report rapid progress in plans for the annual convention of the Association to be held at the San Juan Hotel, Orlando, Florida, February 21 and 22.

Although active membership in the Association is limited to contractors and electrical dealers, a large number of members of other branches of the electrical industry including manufacturers, electric utilities, electrical inspectors, wholesalers and salesmen, are associate members of the Association, and are expected to attend this meeting in large numbers.

In effect, the annual meetings of the Florida Association of Electrical Contractors and Dealers have become electrical industry meetings. The objectives of the association are the betterment of the electrical industry in Florida and the achievement of better relationship between all branches.

Although the complete program has not yet been announced, it will include addresses by electrical men prominent in the industry on subjects that will be of general interest to all branches of the industry. As in the past, particular attention has been given to the entertainment program.

A special feature of this meeting will be the code discussion meeting scheduled for February 23. Another special feature of the meeting will be the electrical exhibit and show which will occupy the entire mezzanine floor and sample rooms of the hotel.

A meeting of the executive committee is scheduled for February 20, at which time officers for the new year will be selected. Present officers are J. J. Newell, Orlando, acting president; Harold N. Lang, Orlando, secretary; and R. C. Bigby, Tampa, treasurer.

## Flexible Cord Data Now Available . .

Much useful data on both construction and application of flexible cord is included in a code lesson on that subject just released by the International Association of Electrical Inspectors.

While editions of the National Electrical Code previous to 1937 contain only brief and somewhat indefinite rules on the use of flexible cords, the 1937 Code requires that cords shall conform to a table included in Chapter 9 and any types of flexible cord other than those listed in the table shall be the subject of special investigation and shall not be used before being approved.

## Air Conditioning Industry Looks Forward To Rapid Growth . .

The air conditioning industry has tapped only a small fraction of its potential market, but there are indications it has entered a period of rapid growth, says a report by Standard Statistics.

Growth in demand for air conditioning equipment in recent months has been particularly pronounced in the case of department stores, restaurants, beauty salons, etc., where installation has been motivated largely by competition.

Growing popularity of self-contained equipment made in sizes that can be moved from building to building with scarcely greater effort than is required to transfer furniture is expected by the Air Conditioning Manufacturers' Association to constitute a powerful opening wedge in the case of large office buildings.

Offering compact units for air conditioning office suites and store rooms will be a feature of the 1938 activities of the industry.

With drug stores continually widening the scope of their merchandising activities, this picture of the basement of Walgreen's Miami drugstore in which sporting goods are displayed advantageously will probably evoke only mild surprise. Of electrical interest, however, is the special Curtis fixture designed for Walgreen's for the conversion of low-ceiling interiors into extremely useful selling space . . . . .

# INDUSTRIAL MODERNIZATION

CONDITIONS confronting industrial plants today, with high costs of raw materials, higher labor costs and stiff competition, require that machinery and equipment be replaced by more modern types if such replacement and modernization will be justified by lower operating costs.

Industrial modernization offers unlimited opportunities to the progressive electrical contractor, who is properly organized and equipped to handle the work. By showing his customers how they may improve their methods and at the same time reduce their costs, he not only helps his customers but he improves his own situation as well.

**By K. D. White***

**Walker Electrical Company**
**Columbus, Ga.**

IN OUR, field, there are two principal avenues that we may follow in being of service to the public, first in the use of electricity to produce light and second as a motive power.

The field of lighting is almost limitless in the opportunities it offers. A few years ago, an individual plant manager considered his plant adequately lighted at night if the employees could get around without falling over the machines, a bare sixty watt lamp here and there, with intensities high here and negligible there, but now intensities that are uniform of fifty foot candles and more are not unusual and lamps are carefully shielded from the eye to produce a uniformly pleasing workable light.

We have used sightmeters extensively with fine returns. They are so small one can be carried in your vest pocket. During the course of an interview, an opportunity can generally be found to create curiosity on the part of your prospect in how it works and at the conclusion of the interview you can leave it with him.

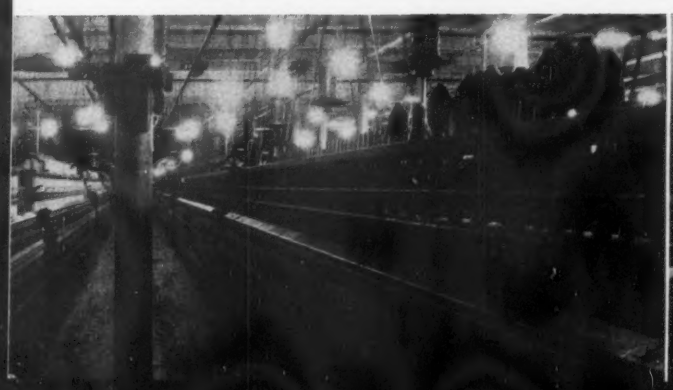
The silent salesman then has a chance to "do its stuff." It shows him that the light in his offices, which had appeared adequate, is really substandard, and out in his plant, it shows him that the lighting is really very much below standard— so much so that he wonders how his employees do their work as well as they do. On your next visit, your prospect is receptive and it isn't difficult to arrange a demonstration and close a sale.

Every task in office or factory is influenced by light. Light should be adequate in amount so that small objects may be made as distinct as larger ones. It should be of sufficient intensity, for good lighting makes details easier to see and provides a contrast between the object to be seen and the background. Lastly, increased lighting speeds up the reaction of the eye, allowing it to receive more impressions per unit of time and therefore one sees with less eye strain.

You often hear the statement made that "It costs too much, we cannot afford it." Right there is the time to call your prospect's hand on that point. The fact is that it is remarkable how little good lighting costs, relatively. The capital assets of the average manufacturing plant that is adequately lighted show that land and buildings are carried at approximately 18%, machinery tools and equipment 32%, inventory, receivables and cash 50%, and the investment in lighting installation only 2%. How foolish to spend thousands of dollars on elaborate machinery and train men to operate it efficiently and then withhold the lighting that is necessary to enable them to perform their tasks efficiently. You

*Abstracted from an address presented before the 35th annual meeting of the National Electrical Contrators' Association in Los Angeles.

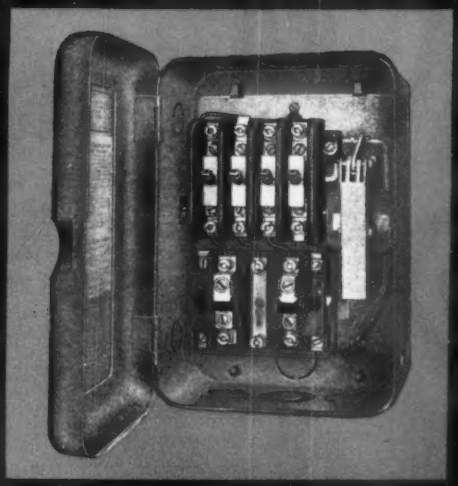
**These "before" and "after" photos show the tremendous improvement in illumination obtained in this Georgia mill by the installation of mercury vapor lamps—a change that would benefit many others**



# TRUMBULL *Control*

## "CM" MAGNETIC MOTOR STARTERS

"In selling Trumbull Magnetic Switches, I have found there's one feature in particular that rates "tops" with contractors, engineers and maintenance men, and that is that all parts . . . including magnetic coils . . . are accessible from the front, easily inspected or removed . . . making maintenance no problem at all."



"Yes, and another feature that registers is the use of non-carbonizing glazed black porcelain bases that prevent dangerous accumulation of dust or carbon and guarantee against flashover. This entire starter mechanism is mounted on a single steel back plate . . . removable as a unit for easy wiring."

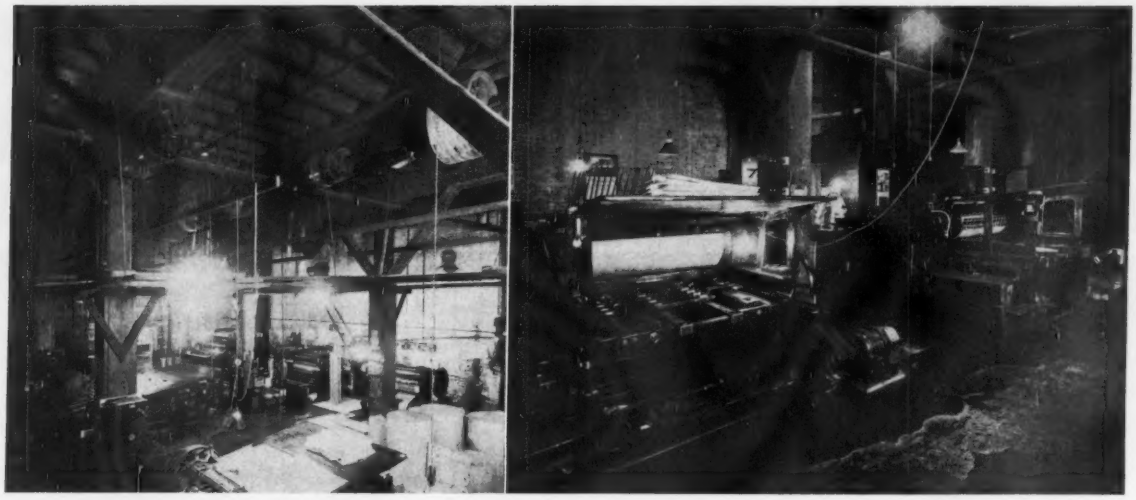
"Identified control terminals for leads to push-button stations prevent errors in wiring. And don't forget that the handsome, round cornered, gray-enameled steel boxes have the "eye appeal" that's a mighty important point in modern installations."

These Magnetic Starters will be further illustrated and described in the February issue of TRUMBULL CHEER . . . the interesting and informative monthly that goes to 35,000 electrical men. Be sure your name is on the list.

## *The* TRUMBULL ELECTRIC MFG. CO.

PLAINVILLE A GENERAL ELECTRIC ORGANIZATION CONNECTICUT

NEW YORK • CHICAGO • BOSTON • DETROIT • ATLANTA • PHILADELPHIA • LUDLOW • NASHVILLE • SAN FRANCISCO • LOS ANGELES • SEATTLE



**Good prospects are to be found among smaller industrial plants as well as the larger—an aggressive Dallas contractor replaced these overhead shafts, in a paper plant, with individual motor drives . . . .**

would not hire a blind man to operate a loom but that is practically what you are doing when he does not have light of sufficient intensity to enable him readily to handle the equipment in his care.

You also hear it said that "It costs too much to operate." Again, the books of a plant having adequate lighting will show that out of every hundred dollars charged to production cost, $5.90 goes for salaries, $16.50 to wages, $52.00 for materials, $2.40 for fuel and power, and $22.90 for advertising and sales cost, insurance of various kinds, interest, depreciation, and profit, with *thirty cents paying the light bill*, less than 2% of the payroll. This smallest item affects all the others.

In the wage block, good lighting promotes greater efficiency, makes less eye strain and hence conserves the vision, creates less accidents with their resultant suffering and loss and makes for better working conditions which helps to lower labor turnover. In the material block, good lighting produces less spoilage, promotes quick and accurate inspection and results in a more uniform and better product.

The progressive contractor should not only have a sightmeter to attack the lighting problem but he should have an ammeter and a voltmeter, both indicating and recording, in his equipment for by their use he can determine the losses between meter and load, which are dissipated as heat. It is just as important to the successful use of electricity for lighting to have plenty of copper to carry it as it is to have good reflectors and the correct type of lamp, and it is not difficult to show that an adequate distribution system pays good dividends on the investment.

The progressive contractor can materially help his client in keeping his plant up to date by advising him to be liberal in his painting appropriation. The best lighting job you can install will be handicapped if walls and ceilings are gloomy and dirty. You can always interest a manager with a discussion of the relative reflection coefficients of various colors used as backgrounds. So be generous and push your painting contractors interests and it will be like bread thrown on the waters for it will return to you many fold.

Although lighting problems are interesting and their solution a source of great satisfaction, no discussion of the uses of electricity in industry would be complete without referring to the use of motors in power application.

If the electrical contractor is to be of service to users of power, he must, necessarily, be familiar with the characteristics of the various types of motors, in order to recommend properly the particular type best fitted for the duty to be performed. It is absolutely necessary that he have complete testing equipment consisting not only of indicating instruments

(*Cantinued on page* 41)

**Another example of motorization of individual machines**

*(Reproduction of G. E.'s current 24-Sheet Poster)*

## ...AND G-E IS THE ONE TO SELL!!

Never before could you offer so much General Electric Refrigerator for the money! Never before have General Electric dealers had so much to *shout* about! New General Electric Triple-Thrift models are thriftier and have more convenience features than ever before. And they are popularly priced!

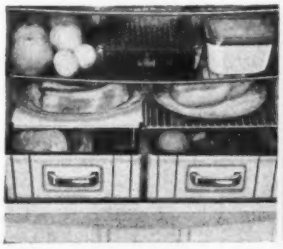
**New quick-releasing, fast-freezing ice cube trays. Full-width sliding shelves, adjustable in spacing. New sliding drawers for fruit and vegetable storage. New stainless-steel super-freezer with removable shelf. One-button temperature control and defrosting switch. Thermometer. Interior Light. Chiller Tray. Matched set of refrigerator dishes. Water flask. Many of these advanced convenience features are standard on all 1938 models.**

"Save Three Ways—through bigger dollar-for-dollar value—lower current cost—and long life"—*that's* what you can tell prospects about the new 1938 G-E Triple-Thrift Refrigerator! The G-E is first choice of millions. It's popularly priced. It's backed by 60 years of electrical experience—by greater sales support than ever—*plus* the acceptance value of the greatest name in electrical manufacturing. Last year America bought more General Electrics than ever before, and this year's G-E is even a bigger value than ever. That's the kind of a line to sell! See the G-E distributor TODAY.

**General Electric Co., Specialty Appliance Division, Sec. DB2, Nela Park, Cleveland, Ohio**

**New!** Quick Releasing Ice Cube Trays. Two cubes or a trayful in a jiffy!

Full Width Sliding Shelves, adjustable in spacing. Removable Split Bottom Shelf.



**New!** Sliding Drawers for storage and moisture-conditioning of fruits and vegetables.

**Oil Cooled** Sealed-in-Steel Monitor Mechanism assures quiet operation, low current cost and *enduring* economy.

**General Electric Refrigerators, Ranges, Electric Sink with Dishwasher and Disposall, Water Heaters, Washers, Ironers, "Packaged" Commercial Refrigeration Products.**

**THE COMPLETE LINE OF ELECTRICAL HOME APPLIANCES**
—every one proved by performance, tested by time. "Go to Town" on the Mainline in 1938. It's *another* G-E year!

**General Electric Range** with Tripl-Oven, Hi-Speed CALROD Cooking Units and many advanced features. 15 models—priced for every income.

**General Electric Sink** with Dishwasher and Disposall. Washes the dishes, disposes of food wastes—*electrically*. It's your next big sales opportunity!

GENERAL ELECTRIC

# Air Circulating Systems Sold

## By Coordinated Advertising Program

By Dwight Abbott

A WELL coordinated promotion program between utility and dealers gave Shreveport, La., a leading place among southern cities in the sale of attic fans during the past year.

More than 400 of these ventilators were installed, officials of the Southwestern Gas & Electric Co. of that city report, giving dealers a 300 per cent increase over sales of the same appliance the year before.

The general program was very similar to that of the year before, and represented a consistent advertising play through customary channels. The results of the program might well be ascribed to the cumulative build up given the attic fan in this area, it was pointed out.

Most successful feature of the promotion was the display of each dealers merchandise on the sales floor of the Southwestern Gas & Electric Co. building. At least 12 dealers took advantage of the offer to set up units in the area way near the main entrance.

Each of these also supplied a salesman on the floor, during the six weeks campaign period. The utility, which sold no fans itself, thus played an impartial role in the selling. Its newspaper copy, run consistently twice a week during the period, was general likewise, stressing health, comfort and thrift features of attic ventilation.

Newspaper copy made a heavy contribution to the success of the program. Both morning and afternoon papers were utilized; the utility's copy covered the lower portion of the page. Dealer advertising accompanied, so that attic ventilation frequently dominated the one or two page spread used during the campaign.

Most successful feature of the utility's advertising, officials reported, was the use of the diagram home, showing the courses of air currents sent through the house by attic ventilation. This diagram also figured successfully in dealer copy.

The model house was featured in window display; this too, contributed materially to the success of the promotion. Radio and bill stuffers also were used—though no billboards. Bill stuffers were supplemented by the mail promotions of various participating dealers.

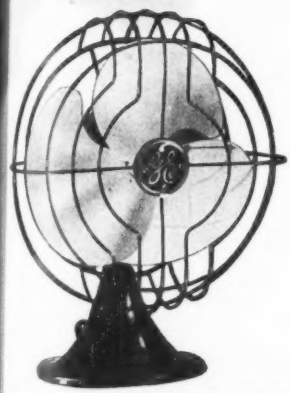
An excellent mailing piece, high in photographic illustrative value, was sent out by the utility to every prospective home builder, during the spring and summer. Like all the other advertising of the utility,

(*Continued on page* 38)

**The cumulative effect of a coordinated advertising campaign in which a number of contractors participated was the sale of more than 400 attic ventilating systems in 1937 . . . . . .**

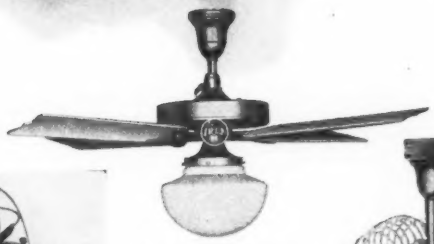
Reddy Kilowatt
Invites You Out to
Inspect His Cool Attic
Reddy Is Cooling the "Talking Home," at 147 Oakley Drive, With an Attic Ventilating System!
SOUTHWESTERN
GAS & ELECTRIC CO.
Don't Swelter for Lack of Coolair!
11 SIZES
A Size for All Installations
SHREVEPORT BLOW PIPE CO
COOLAIR
ATTIC VENTILATION
NOW
Coolair Systems for Every Home
REGALL CO.
Stay-Cool
DOORS CLOSE WHEN FANS ARE TURNED OFF
TERMS LOW AS $5.00 PER MONTH
REED UNIT ATTIC FANS
HEMENWAY
FURNITURE
Attic Ventilation Gives You Cool Summer Comfort for About Ten Cents a Night!
Attic Ventilation Dealers in Shreveport
SOUTHWESTERN GAS & ELECTRIC COMPANY
GET COOL NIGHTS
PHONE
5184
A Trained Engineer Will Inspect Your Home and Give You Intelligent Help and Advice on "Breeze-Air" Dependable "Buffalo Forge" ATTIC VENTILATION
Cahn Electric
Weller Electric Appliance Co.
VENTURA
HOME CONDITIONERS
No Refrigeration Required
Low Operating Cost
Scientific
Economical
EASY TERMS IF DESIRED

# Fans Ventilators and Blowers

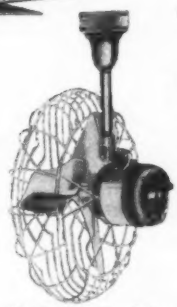


*General Electric Medium Sized Quiet Fan. Newly designed blades give an immense air delivery with extreme quietness.*

*Westinghouse Power-Aire with the new ultra-quiet, oversize blades which will out-breeze any fan you ever saw of like size and power.*

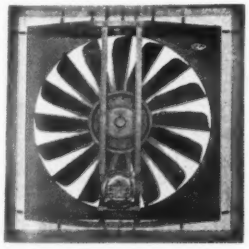


*Hunter Adaptair Hotel Type 52" Ceiling Fan. Instantly adjustable for either up or down draft.*

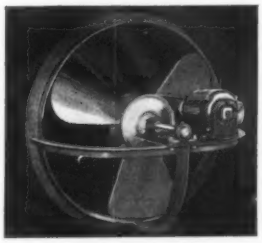


*Diehl Air Circulator. Ceiling, tall pedestal and counter-wall bracket models, all with resilient rubber mountings.*

*Victor No-Draft Fan featuring the sensational new "Miracle Breeze." Ribbon test proves amazing no-draft performance.*



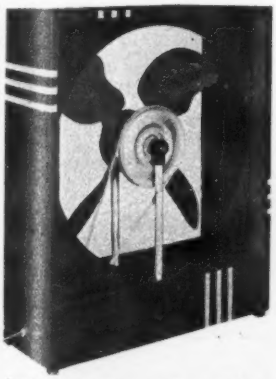
*The COOLAIR Residence Fan, and its method of installation on springs.*



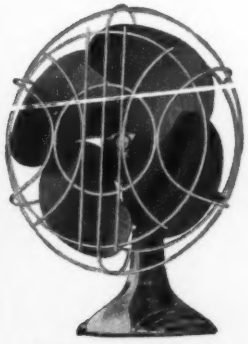
*"Kool-Waiv" noiseless attic fans for summer cooling give exceedingly low decibel (noise) ratings as well as excellent capacities of air, simple in construction and easy to install. International Engineering, Inc.*

## *Advertisers In This Section*

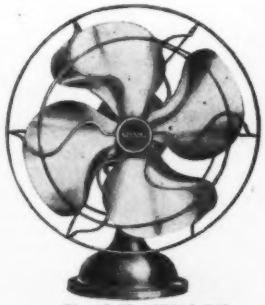
American Coolair Corp.
Buffalo Forge Co.
Diehl Mfg. Co.
General Electric Co.
Hunter Fan & Vent. Co., Inc.
International Engineering, Inc.
Signal Electric Mfg. Co.
Victor Electric Products, Inc.
Viking Air Conditioning Corp.
Westinghouse Elec. & Mfg. Co.



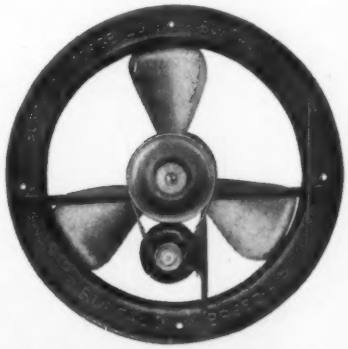
*Available in three sizes, Viking "CirCOOLators" combine pleasing appearance with efficient and silent operation.*



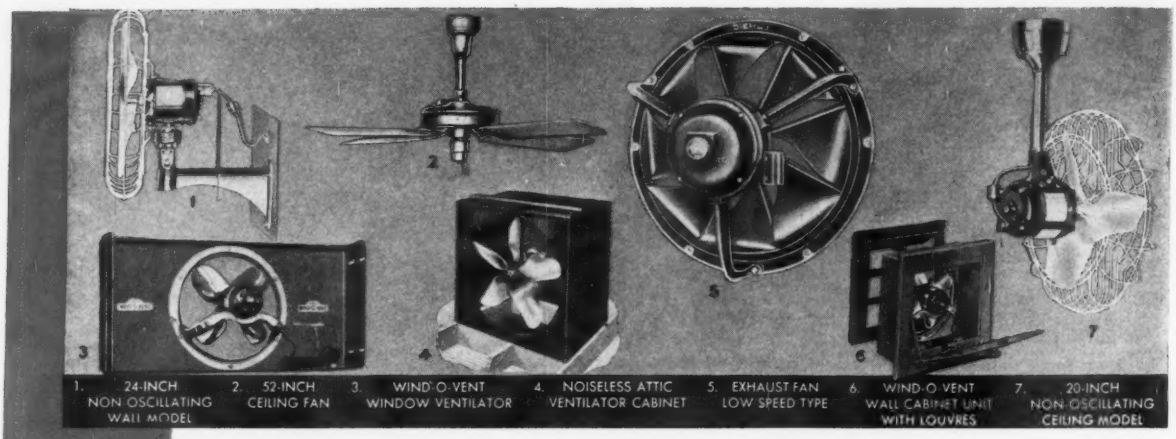
*Wagner Ultra-Quiet Styled Fan—Beautiful—So quiet that five or more of them make less noise than one ordinary fan.*

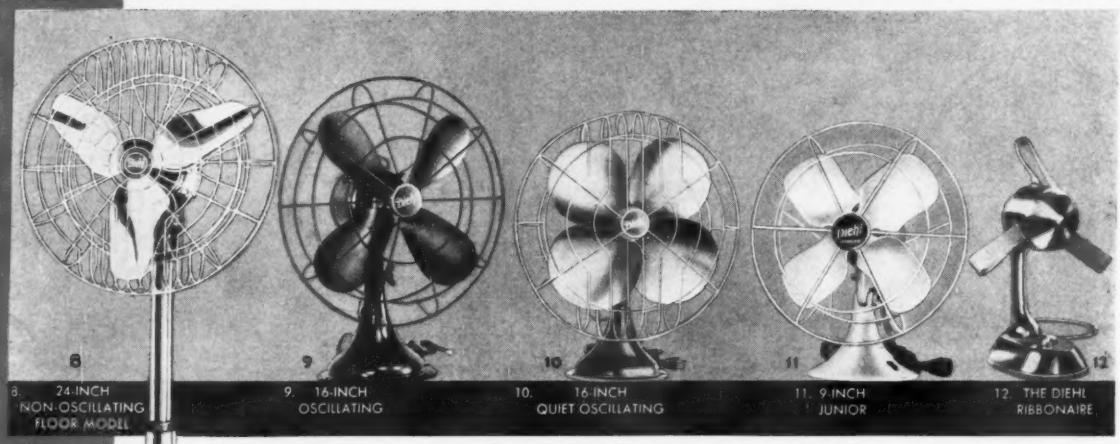


*Signal No. 550-A 10" A. C. Oscillator, 2-speed fan, with silent type blade.*



*"Buffalo" Breez-Air Attic Fan for home comfort cooling. A large capacity fan that is unusually quiet and economical in operation.*


1. 24-INCH NON-OSCILLATING WALL MODEL
2. 52-INCH CEILING FAN
3. WIND-O-VENT WINDOW VENTILATOR
4. NOISELESS ATTIC VENTILATOR CABINET
5. EXHAUST FAN LOW SPEED TYPE
6. WIND-O-VENT WALL CABINET UNIT WITH LOUVRES
7. 20-INCH NON-OSCILLATING CEILING MODEL




# PLAN NOW FOR PROFITS FROM ...THE EXTENSIVE DIEHL FAN LINE

There is a definite, tangible appeal in the 1938 Diehl Fan line that can give you a fast-moving fan business.

Diehl Fan simplicity of design and operation plus the established popularity of Diehl Fans among buyers of desk, wall and ceiling types and air circulators—for commercial and industrial service and domestic use from kitchen to attic—here is a selling combination that's mighty hard to beat.

Added to this is a series of quick-acting sales helps that will not only grab prospects off the street and bring them into your store, but will also help you close sales.

Plan now to get your share of the profits from this extensive Diehl Fan line for 1938. Write for your copy of the Diehl 1938 Fan Catalog No. 49 and merchandising program to Diehl Manufacturing Co., Electrical Division of The Singer Manufacturing Co., Elizabethport, New Jersey.

GOLDEN ANNIVERSARY Diehl 1888 1938

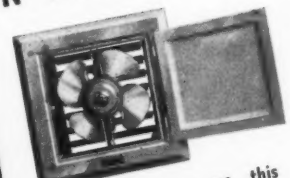
# DIEHL FANS

PIONEER MANUFACTURERS OF ELECTRIC MOTORS • GENERATORS AND FANS

# YOU'RE OUT IN *Front* WITH SIGNAL FANS

[ *THIS IS THE POPULAR COOL SPOT MODEL NO. 360* — *$15.25 List* ]

## A Kitchen Necessity IN EVERY HOME



Sell your customers this Signal Automatic Wall Box Kitchen Vent Fan. . . . Removes cooking odors, steam, excess heat . . . operates quickly . . . 10 inch fan, cast aluminum frame . . . list $32.00. Write for complete information.

TWO LINES— SIGNAL AND COOL SPOT

Dependable performance, accepted appearance and moderate prices are outstanding characteristics of SIGNAL Fans. And, important is the fact they are a proven product. They have established for themselves, over a long period of years, an enviable reputation with both the buyer and seller. The name SIGNAL is recognized as a brand that is nationally known and which can be bought with absolute confidence. SIGNAL Fans for 1938 are real values. Every fan carries the SIGNAL guarantee, and approved by the Underwriters' Laboratories.

Write for 1938 merchandising program.

**SIGNAL ELECTRIC MFG. CO.**
Menominee, Michigan

*Branch Offices: Atlanta, Ga.—W. E. Hopper, 357-59 Marietta St. Dallas, Texas—Geo. E. Anderson, Santa Fe Bldg.*

SIGNAL
MANUFACTURERS OF ELECTRICAL PRODUCTS

## NEW FANS! NEW PLANS!

Here is the big fan news of 1938 . . . the amazing new General Electric Super-Quiet Fans, equipped with revolutionary, new G-E Vortalex Blades!

These blades provide greater air movement and quieter operation —because they are scientifically shaped and pitched so that every bit of blade surface works with maximum efficiency! And they are an exclusive G-E development!

Tie in with G-E FANS for 1938 and participate in the profits that General Electric Fan Dealers will enjoy! You'll have four lines of fans—Super-Quiet, Quiet, Standard and Junior—a line to meet every demand—and brilliant new sales and advertising helps featuring a brand new "HOT WEATHER NERVES" consumer approach!

*Ask your General Electric Fan Distributor's Salesman for complete details. You'll profit by it!*

### THE NEW 1938 G-E FAN PORTFOLIO

Contains complete details concerning General Electric's new fans and new plans for 1938. The salesman of your local G-E Fan Distributor has a copy. Ask to see it! Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

**GENERAL ELECTRIC**

# *We think* MARK TWAIN *would have been a GOOD PROSPECT*

## *for* "Buffalo" BREEZE-AIR HOME COOLING COMFORT

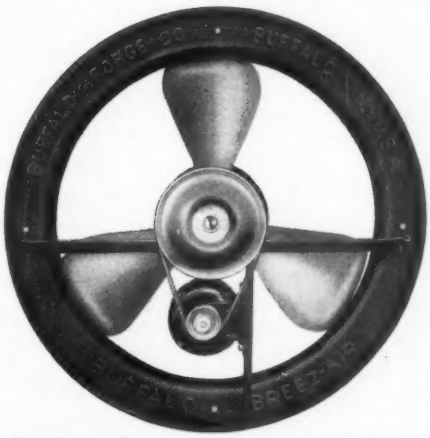
MARK TWAIN, America's great humorist is said to have remarked, "Everyone talks about the weather, but nobody does anything about it."

If he were alive today, he would find we have done something about it—especially the hot summer weather.

Last summer "Buffalo" Distributors and Dealers made thousands of homes comfortably cool by installing Breez-Air Attic Cooling Fans. Needless to say, these foresighted organizations also profited considerably from their good work.

The market is growing fast. There is still valuable territory open. If you have a sales organization, we urge you to look into the profit possibilities of Breez-Air Attic Fans at once. Full merchandising cooperation given to those who qualify. Write or wire.

**BUFFALO FORGE COMPANY**
210 MORTIMER ST. BUFFALO, N. Y.
Branch Engineering Offices in Principal Cities
In Canada: Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

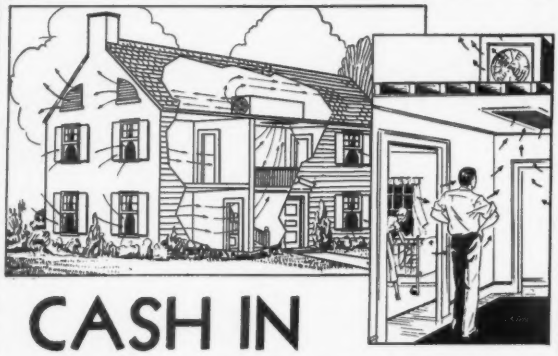



This large volume, quiet fan when installed in the attic forces out the day's accumulation of warm air and cools the home by drawing in the cooler night air.

Hot sultry nights. No sleep. No rest.

Refreshing breezes of cool night air drawn in by Breez-Air Fan. Sound sleep. Good rest.

COOLAIR

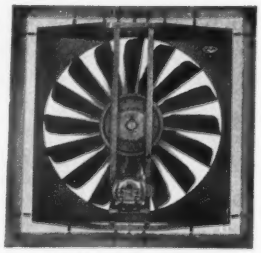


# CASH IN With COOLAIR

THE sweltering days of a long summer will be here before you know it and hundreds of people in your community will be sighing for relief from breathless, sultry afternoons and restless, heat-tortured nights. Smart dealers everywhere are planning now to cash in on the tremendous demand for summer comfort with Coolair ventilating and cooling systems.

Coolair pioneered the field of breeze-conditioning homes, stores, offices and other buildings. And Coolair leads all competition with absolutely quiet performance, low-cost operation, long, trouble-free service and high efficiency. Each installation brings new prospects.

Get set to make real profits selling and installing Coolair fans this summer. Don't wait until hot weather arrives and competition already has the jump on you. Profits pile up faster for those who make their plans early. Write today for complete information.



WRITE FOR FREE ILLUSTRATED MANUAL

Completely illustrated, 28-page booklet with your best sales helps and installation suggestions in handy form. See for yourself why Coolair leads all competition. Mail this coupon today.

Please Send Me Your Coolair Manual.

Name .....

Address .....

AMERICAN COOLAIR CORPORATION .. JACKSONVILLE, FLORIDA

VENTILATING & COOLING SYSTEMS



See and Feel the Sensational "MIRACLE BREEZE"

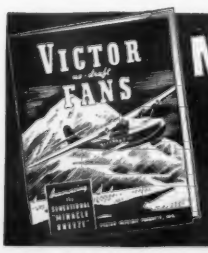
VICTOR NO-DRAFT FANS

● Here's the most powerful sales feature ever offered fan buyers. Victor's "Miracle Breeze" sets a new standard for fan performance—plenty of fresh cooling breeze, but *no drafts* or *sudden blasts!* And, every Victor fan is quality-built to give years of trouble-free service. Equipped with Victor's own super-powered motors, they out-perform all competition. Before you stock any fans, be sure to see Victor's famous ribbon test—ask your jobber or write to

**VICTOR ELECTRIC PRODUCTS, INC.**

**775 Reading Road Cincinnati, Ohio**

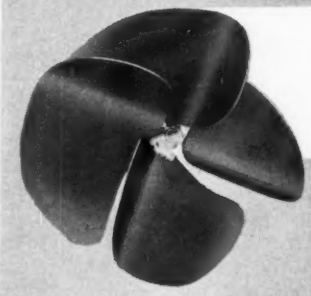
*Makers of Victor In-Bilt Kitchen Ventilators*




NEW! FREE!

Just off the press! . . . Write for your copy of Victor's 1938 catalog today!

# THE ONLY FANS WITH *Ultra Quiet* MICARTA BLADES



WHAT IS MICARTA?

MICARTA is the pioneer laminated plastic that today has thousands of mechanical applications. Made up of layers of fibrous material saturated with synthetic resin, and permanently hardened under heat... it can never thereafter be softened by heat, pressure or solvents.

•

STRONG AND LIGHT

MICARTA is as strong as structural steel for equal weights of cross section, yet is only one-half the weight of aluminum. It will not readily split or break, even with a violent blow. It is non-resonant, eliminating metallic "hum" caused by vibration.

•

WATERPROOF . . . OILPROOF . . . HEATPROOF

MICARTA stands water without swelling, shrinking or warping . . . a marked advantage over composite fibrous materials. Oil, gasoline, or even acid solutions of moderate strength do not affect it. It is unharmed by temperatures up to 230° F. (above the boiling point of water).

•

IN MILLIONS OF CARS . . .

MICARTA is used for timing gears, and hundreds of thousands of larger MICARTA gears are driving large industrial machinery. Gears and pinions cut from MICARTA are completely silent, but as strong and long-lived as iron.

•

ONLY WESTINGHOUSE FANS... have ultra-quiet MICARTA blades, the secret of "Hushed Coolness."

# Westinghouse LONG LIFE FANS

## Present a Dramatic Selling Theme

# *hushed* COOLNESS

## THE *New* PROFIT THEME SONG FOR *1938*

What is "Hushed Coolness?" It's the cooling, refreshing, whisper-quiet breeze provided by Westinghouse fans . . . because of their *exclusive* ULTRA-QUIET MICARTA BLADES. It enables the user to enjoy relaxed comfort and refreshing coolness — awake or asleep — the things every customer *wants* in buying a fan. In addition the customer is interested in long-life, extra years of service — and is willing to pay a little more to get it. The quality built into Westinghouse "Long-Life" Fans, and the Westinghouse name itself, guarantees this. Thus Westinghouse sums up in its basic fan selling story for 1938, the points that mean *bigger sales* and *more profits* for you. "Hushed Coolness" translates into *two words* the exclusive Micarta blade story that is your strongest retail selling argument on Westinghouse fans.

**See** THIS COMPLETE FAN SELLING PROGRAM

Have your Westinghouse representative show you this hard-hitting selling plan . . . or fill out and mail this coupon *now!*
Westinghouse Elec. & Mfg. Co.,
Merchandising Division, Dept. 8149 Mansfield, O.

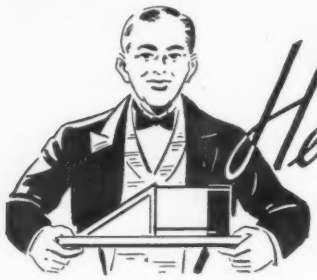
FIRM NAME_____

REQUESTED BY_____

ADDRESS_____

CITY AND STATE_____

# EVERY HOUSE NEEDS Westinghouse

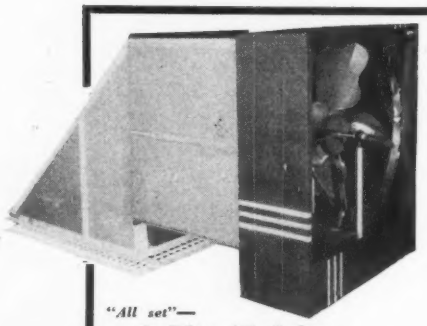


*Here you are, Sir,*

THE VIKING CIRCOOLATOR ATTIC PACKAGE!

ALL ready to set up—vent box with flame-proof trap door —ropes—pulleys — automatic fan switch — everything. All pre-designed, pre-engineered, pre-fabricated. You can't go wrong with the Viking Attic Package—it's just about as mistake-proof as anything can be.

Here is thorough-going, stimulating, all-through-the-house comfort for the inmates and a rapid-fire installation that assures quick profits for jobber and dealer alike.



*"All set"— the Viking Attic Package*

VIKING AIR CONDITIONING CORP.
2201 CENTER ST., N. W. CLEVELAND, OHIO
PIONEERS IN AIR CIRCULATING EQUIPMENT


## Circulating Systems Sold By Advertising Program

(*Continued from page* 30)

this dealt with comfort cooling in a general way.

Comments of several dealers on their own parts in the program is interesting in the light of experiences with installations accumulated over several years.

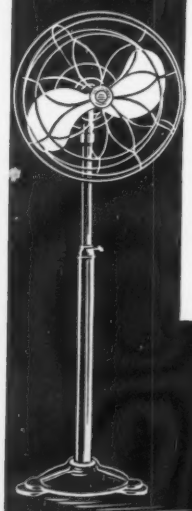
B. Segall, of the B. Segali Co., reported that one of the most effective methods be used for building sales was that of checking on visitors to the homes where installations had been made, and bringing prospective customers to these homes wherever possible.

"We also made appointments with the home owner, where installations had been made, after the cooling system had been put in, just to see that the fan was working properly. At this time, we picked up a number of names of additional prospects, and went to work on them."

The fact that one engineer in his organization "eats, sleeps and dreams" attic fans during the season, he said, and works with no other appliance at this time of the

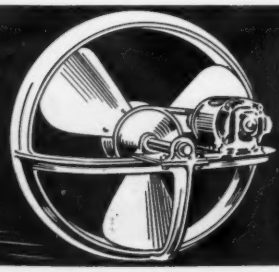

KOOLWAIV

*Offers the Complete Line of* NOISELESS Summer Cooling Fans



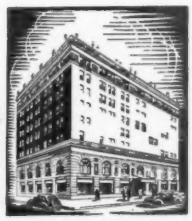
1938 is sure to be another big year for KOOLWAIV Air-Conditioning equipment — Cooling Fans, Attic Ventilation Fans, Circulators and Industrial Cooling of every description. KOOLWAIV offers the greatest values today; AGENTS, JOBBERS, DEALERS—Send for KOOLWAIV'S proposition today—Let us show you the biggest line-up of equipment and sales helps you've ever seen. We are ready to put PROFITS in your pockets now; Please address Dept. 64.

INTERNATIONAL ENGINEERING, INC.
DAYTON, OHIO



THE HOTEL of THE MONTH

*New Southern Hotel*
JACKSON, TENN.



ALBERT PICK HOTELS

You'll get more for your money at Pick Hotels. Spacious, comfortable rooms. Delicious food and real personal service. All at moderate prices.

| | |
|---|---|
| CHICAGO, ILL. | GREAT NORTHERN HOTEL |
| DETROIT, MICHIGAN | TULLER HOTEL |
| DAYTON, OHIO | MIAMI HOTEL |
| COLUMBUS, OHIO | CHITTENDEN HOTEL |
| COLUMBUS, OHIO | FORT HAYES HOTEL |
| TOLEDO, OHIO | FORT MEIGS HOTEL |
| CINCINNATI, OHIO | FOUNTAIN SQUARE HOTEL |
| CANTON, OHIO | BELDEN HOTEL |
| SOUTH BEND, INDIANA | OLIVER HOTEL |
| INDIANAPOLIS, INDIANA | ANTLERS HOTEL |
| ANDERSON, INDIANA | ANDERSON HOTEL |
| TERRE HAUTE, INDIANA | TERRE HAUTE HOUSE |
| ASHLAND, KENTUCKY | VENTURA HOTEL |
| OWENSBORO, KENTUCKY | OWENSBORO HOTEL |
| JACKSON, TENNESSEE | NEW SOUTHERN HOTEL |
| ST. LOUIS, MO. | MARK TWAIN HOTEL |
| WACO, TEXAS | RALEIGH HOTEL |

PICK HOTELS

WHENEVER YOU SEE THE WORD PICK THINK OF ALBERT PICK HOTELS

year, contributed materially to the enormous increase in his sales.

The adequate job, he insists, is the criterion most important above all others. "We try to give the homeowner a change of air at least once every minute. This takes a wide range of fan sizes."

Segall also found the attic fan a convenient opener for air conditioning units; in not a few installations, the air conditioning unit for a single room was sold along with the fan. This all tends to pave the way for a possible later drive for air conditioning, he said.

Abry S. Cahn of the Cahn Electric Co., reported more satisfactory installations than at any time in the past, "because we know more about it. We had found out enough about attic ventilation to determine in our minds how necessary it is to have a fan which will absolutely balance." He emphasized the importance of delicate precision instruments to give this proper balance and installation.

"Every residence," he emphasized, "presents a somewhat different engineering problem. Last year, however, we so trained our salesmen that they were able to figure out the proper size fan, and were in a position to give the customer a price at once.

"But the installation of the fan was left to the engineer who followed the salesman. This enabled us to do a better selling job, and with less come-back than heretofore.

"There are great possibilities in attic ventilation," he concluded, "though I feel that we have mastered the problem from the standpoint of attic ventilation as it is today. However, there are undoubtedly further advances and improvements to be made, and we hope to have an active part in making and applying them."

Reporting an increase of approximately 100 per cent in comfort cooling sales, officials of the Shreveport Blow Pipe and Sheet Iron Works explained that their company had carefully circularized better sections of the city. Personal contact work accounted for the majority of their sales; newspaper, billboard and radio were used.

---

### Mercury Vapor Lighting Used Effectively In Store . . . .

A combination of mercury vapor and Mazda lamps in indirect reflectors were used most effectively for the lighting of the new super store of Jitney-Jungle, Inc., Jackson, Miss., grocery chain. A cool light, daylight-like in appearance is produced, which shows up fruits and vegetables in their true colors.

Three rows of lights are provided for the store and each unit consists of an aluminum Alzak reflector and one 250-watt high intensity vapor and one 750-watt Mazda lamp. An illumination level of about 10 foot candles of light is provided for the store. The design was prepared by engineers of the Mississippi Power and Light Company and installation was handled by a local contractor.

---

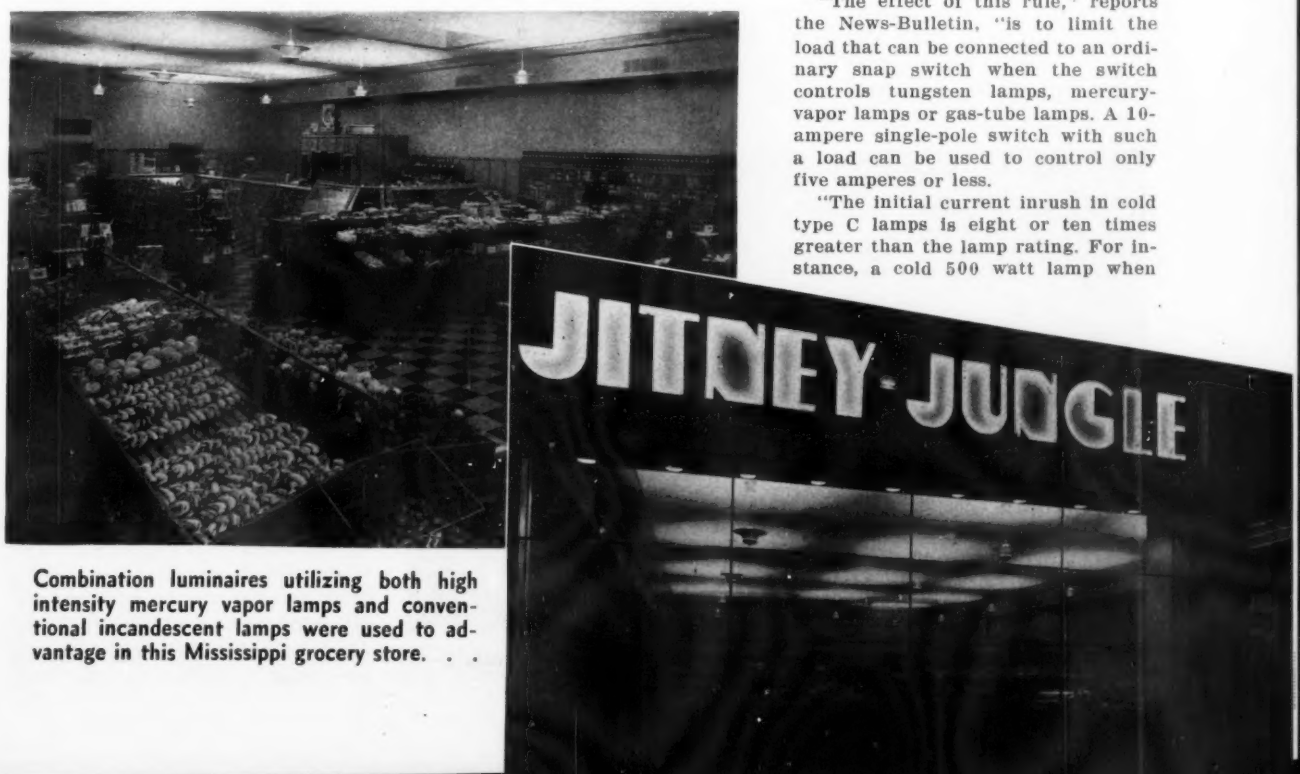
### 1937 NEC Requirements For Type C And Vapor Lamps .

Many electrical contractors have been puzzled by the introduction of a new requirement in the National Electrical Code relating to snap switches. This requirement, given in Section 3814, requires that unless snap switches have a "T" rating, they shall be of a current rating of at least twice the rating of the lamps or transformers served where the load controlled includes tungsten lamps, and mercury-vapor and gas tube lamps and their transformers.

An interesting discussion of this requirement appears in the recent issue of the *News Bulletin*, published by the International Association of Electrical Inspectors.

"The effect of this rule," reports the News-Bulletin, "is to limit the load that can be connected to an ordinary snap switch when the switch controls tungsten lamps, mercury-vapor lamps or gas-tube lamps. A 10-ampere single-pole switch with such a load can be used to control only five amperes or less.

"The initial current inrush in cold type C lamps is eight or ten times greater than the lamp rating. For instance, a cold 500 watt lamp when




**Combination luminaires utilizing both high intensity mercury vapor lamps and conventional incandescent lamps were used to advantage in this Mississippi grocery store. . .**

turned on has a current surge of approximately 5000 watts. Although this surge is of short duration, it imposes an extreme demand on the controlling means. Therefore switches with special characteristics are required for these severe conditions. Extensive research and study have led to the development of proper switches for this service.

"The Underwriters' Laboratories, recognizing this severe service, have established the identifying symbol "T" for equipment suitable for this rating. Switches so marked must pass the standard switch tests and then operate at least 6,000 additional cycles controlling tungsten filament lamps at the rating of the switch and at 125 volts.

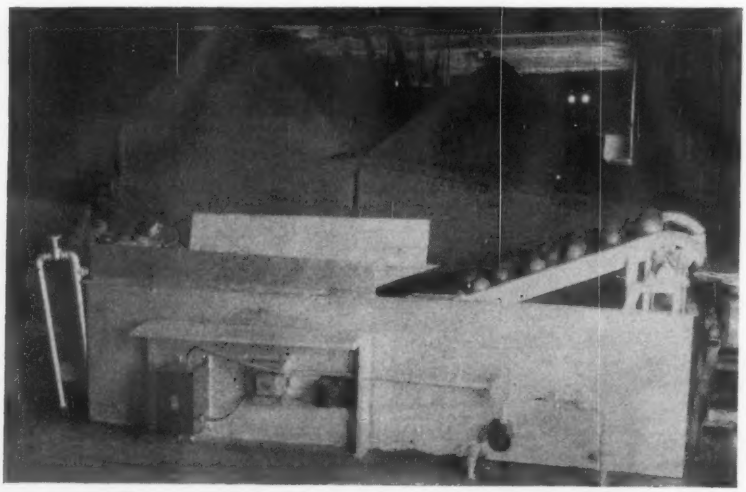
"For some time inspectors have complained of failures of the ordinary rated snap switch on tungsten lamp loads. This new code rule will obviate this complaint.

"The marking 'T' appears with the rating on the cover of surface mounted switches, and on the yoke of flush switches. A number of switch manufacturers now list and stock switches of this type."

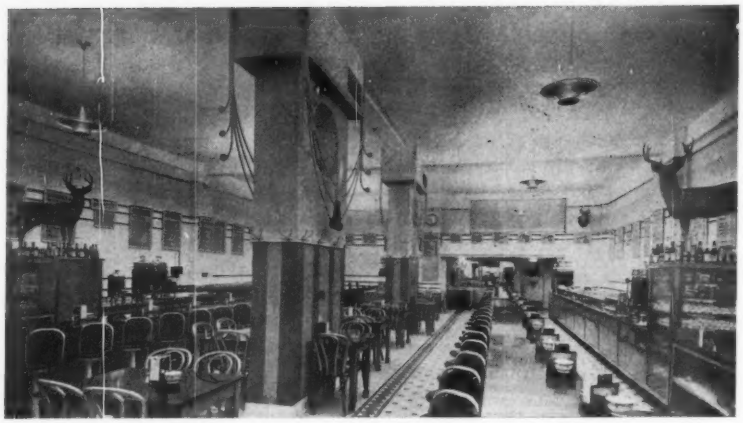
## Heating Unit Applications In Packing Plants . . .

Electrical heating units find many applications in Florida fruit packing houses. Shown below is an installation completed recently for the Chester Groves Packing House, City Point, Florida.

The heating installation consists of two 4.5-kw, 3-phase Chromalox immersion heaters, controlled by an automatic thermostat operating through a magnetic contactor, thus providing uniform temperature of the treatment solution.



**Fruit packing companies are good prospects for heating unit installations, a profitable field for electrical contractors . . . . . .**



**Wetter Electric Co., of Dallas, did a good job of selling in this cafe installation. The contract included high level illumination, year 'round air conditioning, and a communication system . . . . . .**

A number of other Florida packing houses have completed electrical heating installations of this nature, finding them convenient and practical as well as economical.

## Dallas Contractor Completes Interesting Cafe Contract . .

An interesting installation was recently completed in a down-town cafe, the Webb Waffle Shop, by Wetter Electric Company, Dallas, Texas. Enlargement of the cafe doubled its width. The Wetter job included the installation of modern illumination, year-around air conditioning, and a private communication system.

Previous to the remodeling, lighting was provided by eight crystal-bottom fixtures with 300-watt lamps, providing about 6 foot candles of light at the table tops and counters. These were replaced with four Curtis fixtures constructed especially for silvered-bowl lamps, using 500-watt lamps. The new fixtures give approximately 11 foot candles of light at tables and counters. The ceiling, formerly ivory in color, was repainted flat white, thus improving reflection.

Air conditioning is provided by a dual type refrigerator unit. Air ducts were built into the central columns in the cafe. The system filters and circulates heated, humidified air in the winter; and cooled, de-humidified air in summer.

The communication system actually reduces the number of employees needed to operate the cafe, according to R. E. Wetter. As the cafe is rather deep, waiters found it necessary to walk to the rear to call orders out to the chef in the kitchen, then make a trip to the back of the cafe to get each order.

The new call system installed is really two complete systems interconnected with four connections—one at each counter, one for the chef in the kitchen, and the fourth on a mezzanine balcony in the office of the manager. In this system, one unit serves as both loud speaker and microphone. Ordinarily, the unit acts as a loud speaker. To speak into it, a switch is pulled down and the waiter can then call his order to the chef; the chef, likewise, can call out the order that is completed.

### North Carolina Chapter IAEI Holds Annual Meeting . . .

The North Carolina Chapter of the International Association of Electrical Inspectors held its annual meeting at the Carolina Hotel, Raleigh, January 18 and 19, according to an announcement by H. C. Davis, city electrical inspector of Raleigh.

A number of national authorities on the code were scheduled to address the meeting, including Dr. M. G. Lloyd, National Bureau of Standards; V. H. Tousley, secretary, I. A. E. I.; Arthur L. Abbott, engineer for N. E. M. A.; H. H. Weber, U. S. Rubber Company, Wire and Cable Division; J. S. Mahan, consulting engineer, Chicago; and O. H. Frederickson, National Electric Products Company; and Frank E. Hartis, president, N. C. Contractors' Association.

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### Industrial Modernization And Its Opportunities .

(*Continued from page* 28)

but recording instruments as well for a good chart will indicate to the contractor or his representative conditions that could not be revealed in any other way. The owner never fails to be impressed with a chart that shows him exactly how his equipment is performing. The contractor should also be familiar with the various types of control equipment for poorly applied control will spoil the performance of any motor.

The speed at which a machine is to operate is of vital importance to the owner and since speed enters into every motor application, the selection of a motor to operate a machine at a given speed should be given careful consideration. Driven speeds vary from ten or twelve revolutions or even slower up into the thousands of revolutions per minute. Necessarily, motor speeds are comparatively limited in the a-c line of motors and combinations of jack shafts, gears and motors are used to get the desired driven speed.

The plant owner and manager are often troubled with production problems and always are interested in any discussion that leads to lower costs through increased production and lower maintenance costs. The contractor who has an opportunity to make a power survey will generally find drives that are obsolete, motors misapplied, controls inadequate, that modern equipment can profitably replace. By the careful use of recording wattmeters, ammeters, voltmeters and speed indicators, records can be obtained that cannot be disputed and which can be used to prove your point to the owner that not only should his old equipment be laid aside but that he cannot afford not to do so.

For example, in many industries presses are used to bale finished goods into shapes suitable for shipping. You are all familiar with the press operated from a shaft to a jack shaft with a series of drives to enable the operator to raise or lower the press as he finds necessary. A contractor friend who was applying motors to a steam driven plant had to motorize such a press along with other equipment. He selected a motor of proper size and speed and belted it directly to the driven press shaft, eliminating two drives that had been used for raising and lowering the press and controlled the motor with a push button operated magnetic reversing motor starting switch. Now the motor is used only when actually needed to press goods and then only so long as the operator keeps his hand on the button. This simple application, among others, so pleased the owner that other suggestions of the contractor were readily given approval.

Just as the sight meter has proved to be such an important factor in selling modernized lighting, so will some other suitable measuring instrument prove valuable in selling modernized wiring. I believe we have such an instrument in the tong-type indicating ammeter. In this instrument, the o-shaped laminated core is split in two places so that by squeezing the handle you open up the form which permits you to enclose any conductor of a circuit and determine accurately the amount of current flowing in that particular wire of the circuit. They are so calibrated that you can read current values ranging from five amperes to six hundred amperes accurately. The use of this instrument never fails to create interest and is invaluable in making a quick survey to determine whether current values are too high for the wire involved, to determine whether circuits are balanced and for use in determining whether more extensive investigations should be undertaken.

We have all known that one of the variables in measurement of alternating current power is power factor but comparatively little attention has been given to it until recently when improvements in power factor corrective devices have been made to such an extent that any modernization program is not complete unless power factor improvement is considered. I doubt if there are more than a small percentage of contractors who have really considered the possibilities created by power factor studies.

Necessarily, the first thing to do in such a study is to use your recording wattmeter, power factor meter, voltmeter and ammeter to see how you stand and then you can determine accurately the amount of corrective equipment needed to produce any result that is wanted, and knowing wire sizes and lengths, etc., it is not difficult to determine the return that can be made on the investment required. I have in mind a plant, where such an installation returned seventy percent on the investment and the beautiful part of it was that you could absolutely prove it by your charts taken before and after the installation was made. Such jobs are rarely competitive.

We are all familiar with the use of electricity for heating domestic water in the house, but how many of you have given any thought to this simple problem? Electricity for heating is dependable, the temperature control and distribution are accurate, its regulation is automatic, one is assured that similar operations can be duplicated and the experience of many users of electricity in handling heating problems indicate that its cost is comparable to other methods of producing heat.

Experiments have proven that a great many operations can be handled more satisfactorily by using electricity than by any other method. Electric welding units, portable and stationary, electric furnaces, electricity in the printing industry, the use of strip, cartridge and immersion heating units, soldering irons, glue pots are all examples of the use of electricity that cannot be duplicated

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by any other method with as satisfactory results.

Electrical engineering and therefore electrical contractors have problems not encountered by other branches of the building industry. When a wiring installation is being designed, not only present requirements, but future needs should be provided for, and there is no acurate way of finding what the future need will be. An electrical installation installed for present needs may be overloaded and inadequate in five years

Lighting intensities for industrial process work started at two foot candles, jumped to 5 and 6, then to 10 and 15, recently to 20 and 35, and some even to 50. Are we willing to say this is the limit? Have we any way of telling where they will go? A lighting system should be installed for twenty years service. What will be the generally accepted level in 1957?

We face the same problem in power wiring. Motors are installed to drive productive machinery, they are of the correct size and the wiring is adequate. Then machinery is speeded up, or automatic processes are installed, both of which require more power. Other processes are made automatic requiring more power and less labor. A unit heater system may be installed—or possibly air conditioning — electric refrigeration for drinking water or process water cooling — electric water heating—electric furnaces—electric welding.

All of these things make for progress but they add load to an already overloaded system. Since we promote the sale of these things, should we not forsee their installation? In too many cases we have failed to foresee them. Are we going to make the same mistakes again? If we are not, we must look ahead and try to predict the future. What will be the next development, the next load builder?

If we are to hold our customers' good will, we must provide for his future needs as well as his present requirements. A customer is satisfied only so long as the goods sold him meet his expectations. He may be satisfied when the installation is made, and he may get all that he paid for, but his good will is gone when the job ceases to function.

# WITH THE *Light and Power* COMPANIES

## Georgian Woman Wins Contest Award . . .

OF THE 175,416 entries in the recent $40,000 New American Better Living Contest conducted by the General Electric Company, that of Mrs. C. Wallace Smith, of Clayton, Ga., was judged one of the two best. She and A. M. Brant, a Columbus, Ohio, professor, tied for the grand prize, and each was awarded a $12,000 home.

The awards were announced recently by Charles E. Wilson, executive vice president of the General Electric Company, whose suggestion, made several months ago to the electric service companies of America, inspired the national program of which this contest is a part.

Although the "Better Living" contest, designed to bring out personal reaction to the electrical way of living and highlight the steadily increasing influence of electricity on modern family life, is concluded, the second phase of the contest which consists of a home building activity will continue.

Modern home builders will be invited to submit plans, specifications, and photographs which will be judged by an impartial jury and rated according to the way they best realize the following ten specifications: good location and architecture; sound construction and skilled labor; quality materials and equipment; landscaping and interior decorating; sound financing; new materials; insulation and sound deadening; heating and air conditioning; plumbing and sanitation; and electrification.

Awards for the best entries will include 20 prizes of $1000 each from the General Electric Company for the homes selected nationally which best meet the ten specifications and, in addition, it is anticipated that other awards will be made by sponsoring electric service companies and various manufacturers.

## Appliance Competition Open To Utility Retail Salesmen . . .

To give additional impetus in 1938 to the swing to electric cooking, R. B. Marshall, of Detroit, president of Electromaster, Inc., manufacturer of electric ranges and water heaters, has offered cash prizes totalling $500 in a competition open to retail salesmen of operating utility companies in the United States.

The contest will be conducted under auspices of the Edison Electric Institute, and prizes will be awarded at the annual convention in 1939, to be held at the World's Fair in New York City. The Marshall award recently was accepted by the institute's prize awards committee, of which H. P. Liversidge, of Philadelphia, is chairman.

The $500 will be distributed as awards of $100 each to operating utility retail salesmen who sell, lease or rent for their companies in 1938 the largest number of domestic electric ranges of a rated capacity of seven kilawatts or more. The donor of the award said he believes the competition will stimulate utility retail salesmen to greater activity and efficiency. He invited attention to the fact that Michigan, paced by the Detroit area, already is one of the leading districts in the United States in regard to the consumption of electric current for home cooking.

Mr. Marshall, who has been president and general manager of Electromaster since 1933, formerly was with the Detroit Edison Company.

## 80,000 Hp Hydro-electric Project Planned For Oklahoma . . . .

The Grand River Dam Authority, Vinita, Oklahoma, has filed with the Federal Power Commission its declaration of intention to construct a large dam and hydro-electric project on Grand River, in Mayes, Delaware, and Ottawa counties, Oklahoma, for the purpose of flood control and power development.

The proposed project consists of a dam and hydro-electric plant in and across Grand River near the town of Pensacola, in Mayes County, Oklahoma. The dam will be approximately 147 feet in height above the bed-rock, and it will create a reservoir having a storage capacity of approximately 2,000,000 acre-feet. The installed capacity of the generating plant will be approximately 80,000 horsepower.

## Increased Generating Capacity Planned for Shreveport . . .

Construction of a $1,200,000 addition to its Shreveport plant will be started at once by the Southwestern Gas & Electric Company under a ten-year tax exemption contract signed recently by Gov. Richard Leche and A. Liederman, president of the company.

The new plant addition will mean an increase of 15,000 kilowatts in generating capacity, increasing the plant's total capacity to 45,000 kilowatts.

According to N. P. Heath, superintendent of power, Southwestern Gas & Electric Company, the addition will include the installation of one new 15,000 kilowatt turbo-generator in the present power plant building. Two additional boilers will be installed.

## Orlando Utility Enjoys Steady Load Growth .

FEW municipally owned electric utilities can point to a better record of achievement than that of the Orlando Utilities Commission of Orlando, Fla. This Commission, created by a special act of the Florida State Legislature, announces in its financial statement for 1937 that the total assets of the utilities now amount to more than $4,600,000 and that the total income for 1937 was more than a $1,000,000. The gross operating profit for the year was nearly $600,000 or an increase of about $75,000 over the year 1936.

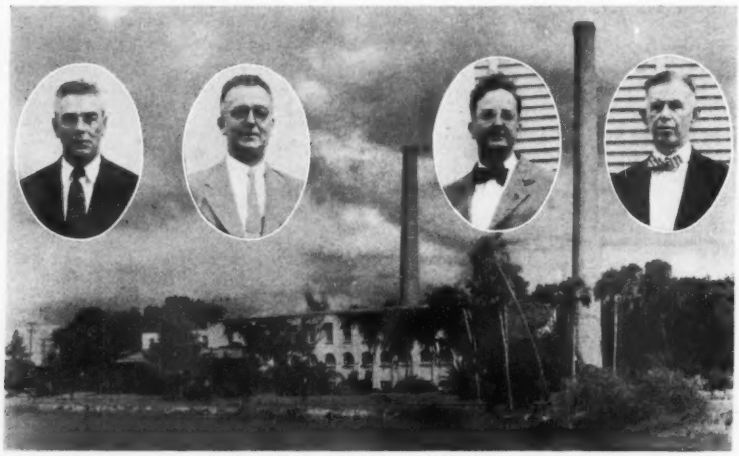
The Commission, which provides water service as well as electric service for the city of Orlando, first acquired its electrical plant in 1922. Since that time, the assets have increased until they are now more than eight times as much as the original purchase price.

About one-third of its original bonded indebtedness of $1,500,000 has been paid into the city treasury. For many years none of its income was turned over to the city treasury but was spent entirely in paying the interest and principal on public bonds and the expansion of its plant and service. However, during the depression years when the credit of the city was jeopardized, the surplus income of the utilities was transferred to the city to pay its cost of government and to protect its credit.

At the close of 1937, electrical service was being provided by the Commission for 9,717 customers, an increase of 5.8 per cent over the number served at the beginning of the year. Kilowatt hours consumed during the year amounted to 18,746,074, an increase of 12.9 per cent over the preceding year.

Increasing loads have brought about the need for larger generating plant capacity and consideration has been given to the purchase of a new turbine with a capacity of 10,000 kilowatts. The charter of the Commission permits it to operate anywhere in the county.

Although the actual operations of the utilities are under the management of M. W. Brown, general manager, general policies are decided by the Utilities Commission which, at the present time, consists of H. C. Babcock, president; Dr. H. M. Beardall, vice president; T. H. Evans and Harry L. McDonald. These commissioners, who include some of the largest tax payers of the city, serve gratuitously. The mayor of the city of Orlando, also serves as an ex-officio member of the commission. S. Y. Way serves the city in this capacity at the present time.



Shown here is the electric generating plant of the Orlando Utilities Commission, Orlando, Fla., amid its picturesque surroundings. The present commissioners, shown in the insert, reading from left to right, are Howard C. Babcock, president, Dr. H. M. Beardall, vice president, Howard L. McDonald, and T. H. Evans. Mayor S. Y. Way, of Orlando, not shown in the above group, is also a member of the commission.

## Oklahoma Lines Subjected To Severe Ice Loads . .

Distribution and transmission lines of the Oklahoma Gas and Electric Company were subjected to one of the most severe ice storms ever experienced by the company when temperatures dropped below freezing for three days beginning December 13, during a drizzling rain.

In some places the ice on wires measured six inches in circumference and some checks showed as much as two pounds of ice per foot of conductor. Obviously, no normal construction could stand such loads and many failures were experienced.

Considerable damage occurred to the distribution system, particularly in the vicinity of trees. Many limbs were broken by the ice and fell on the distribution lines which failed under the additional load of the falling ice and limbs.

Only one town in the northern division escaped without at least a partial service outage.

## Petroleum Power Club Elects Officers For 1938 . . . .

The Petroleum Electric Power club elected C. N. Robinson of the Public Service Company of Oklahoma, Tulsa, as president for the coming year at the concluding session of a two-day annual conference conducted recently in Shreveport, La.

O. W. Jones, Central Power and Light Company, Corpus Christi, Texas, was elected vice president and Harry E. Roberts, Empire District Electric Company, Joplin, Mo., was named secretary-treasurer.

Included on the two-day program were talks by Ed Schreifer, Sales Analysis Institute, Chicago; Frank Ennis, western editor of *Electrical World*, Chicago, and A. B. Morgan, Edison Electric Institute.

R. E. Patrick, Kansas Gas and Electric Company, F. A. Graham, Kansas City Power and Light Company, and K. K. Kreamer, Houston Lighting and Power Company, also presented papers on purchased electric power for petroleum production, transportation and refining.

## Craddock Appointed Rate Chief

The Rural Electrification Administration has appointed F. Harper Craddock of Centralia, Washington, as Chief of the REA Rate Section. He succeeds H. Zinder, who has been transferred to the Federal Power Commission.

# New Production Record Set by Light and Power Industry in 1937

By C. W. Kellogg
President, Edison Electric Institute

ELECRIC power output set a new high record in 1937, exceeding that of the previous year by 8-½%, and reaching a total of 119 billion kwhr. This represents an increase of 28% above the boom year of 1929. Production by water power was 40 billion kwhr, and by fuels 74 billion kwhr, while power imported from Canada and purchased from other sources was 5 billion kwhr.

The highest weekly production, which usually occurs the week before Christmas, occurred this year in the last week of August. This was due primarily to the industrial recession in the later months of the year, but it reflects also the influence of the large refrigeration and air conditioning load that has developed in recent years.

Generating capacity at the close of 1937 was estimated at 35,042,000 kilowatts, of which 9,617,000 kw, or 27-½ per cent, was in water power plants, 24,745,000 kw in steam and 680,000 kw in internal combustion engines. New construction during the year comprised 1,050,000 kw of additional power generating machinery, which was, in part, offset by the retirement of 268,000 kw of older equipment, leaving a net increase of 782,000 kw added to the electric utility power plants for the year 1937.

Total construction expenditures for 1937 (exclusive of Federal work) were estimated at $455,480,000, a large increase over the $289,710,000 spent during the previous year, but still less than one-half of the expenditures during the peak year of 1930. Of the 1937 total, the expenditures for distribution poles, wires and equipment again constituted the largest item, being $203,250,000 or nearly one-half of the entire amount. Expenditures for steam generating stations totaled $113,060,000 or 24-½ per cent while expenditures for hydroelectric plants again were negligible, costing only $10,540,000.

Some 27,000,000 customers are now receiving electric service. This represents an increase of 794,000 during the year. Of those newly connected, about 157,000 were farms, bringing the total number of farms supplied with electricity to 1,200,000 at the end of 1937. This represents about 19 per cent of all farms having occupied dwellings and some 28 per cent of all farms which have dwellings valued at more than $500. It is estimated that existing electric power lines reach an additional 280,000 farms which do not take service, making a total to which service is available of about 1,480,000.

Sales of electricity to all ultimate consumers amounted to 99,300,000,000 kilowatt hours compared with 90,044,000,000 kilowatt-hours in 1936, an increase of 10.3 per cent. Farm consumption increase 24.4 per cent, residential consumption 12.9 per cent and commercial and industrial use 10.6 per cent.

Total revenues from sales of electricity aggregated $2,200,000,000 compared to $2,044,500,000 in 1936, an increase of $155,500,000. The industry's consumers received 10 per cent more electricity, and they paid only 7.6 per cent more for their service in 1937 than in the preceding year.

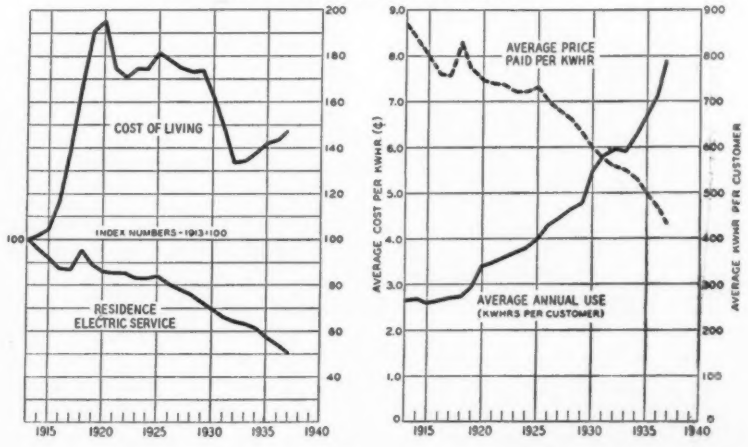
Increased costs absorbed a large part of the increase in revenue. A substantial increase in taxes, in wages and in fuel costs was experienced. Taxes paid by power companies were in excess of $300,000,000, or 15 cents per dollar of their gross revenue.

Revenues per kwhr for all classes of service were 2.22c in 1937, compared with 2.27c in 1936.

Of the total sales of electricity, large industrial and commercial users took 52,640,000,000 kwhr or 53 per cent. Small light and power customers used 18,41,000,000 kwhr, while residential customers took 16,930,000 kwhr.

The post-war growth of electricity used in the home continued last year at an accelerated rate. The annual use per residential customer in 1937 was 797 kwhr, or nearly 10 per cent above the 727 consumed by these customers in 1936. The annual revenue per kwhr for residence use has continued to decline to 4.37 cents, compared with 4.65 cents in 1936, or a decrease of 6 per cent, which is the average rate of decline during the past several years. At the close of 1937, the unit cost of electricity in the average home was almost exactly one-

RESIDENTIAL ELECTRIC SERVICE



half of what it was in 1913, although the cost of living is almost one-half as much again at the present time as it was before the war.

In 1927 the average residential customer paid $30.19 for 444 kwhr. In 1937 he paid $34.83 for 797 kwhr. He is receiving 353 kwhr more per year and paying only $4.64 for it. This incremental cost to him for the additional energy is thus only 1-1/3 cents per kwhr.

## Active Year Planned For IES Southwestern Chapter . .

FOLLOWING the success of its fall meeting, held November 29 in Dallas, the Southwestern Chapter of the Illuminating Engineering Society is planning two very interesting gatherings—a winter meeting on February 4 and a spring meeting, April 1, both to be held in Dallas.

Topics at the February meeting are "Architectural Lighting and Luminous Fronts," W. E. Folsom, committee chairman; "School Lighting," Stanley Zercher, chairman; and "The Architectural View of Residential Lighting," C. R. Davis, chairman. In addition, there will be a feature address by Ward Harrison, director of engineering, Incandescent Lamp Department, General Electric Co., Nela Park, and past president of the I.E.S.

At the spring meeting the following program is scheduled: "Sports and Floodlighting," A. P. Hammerstrom, committee chairman; "Street and Highway Lighting," G. C. Buchanan, chairman; and "Electrical Advertising." The feature speaker will be H. B. Dates, Case School of Applied Science, Cleveland, and I.E.S. president.

The Southwestern Chapter, of which L. R. Ward, Texas Power & Light Co., is now chairman, has grown until it now has an active membership of 57 illuminating engineers, 29 of whom live in Dallas, and the others in various Texas and Oklahoma cities.

The widely scattered membership has created an attendance problem which required careful study to determine the type of meeting that will justify the trip to Dallas for those located in other cities. To meet this condition, the Southwestern Chapter has inaugurated a new plan calling for three intensive all-day meetings during the year, instead of monthly meetings as heretofore.

Chapter plans also include group meetings to be held at frequent intervals in each of the principal cities of the Chapters territory. These will be sponsored by various committees and will be in addition to the principal meetings at Dallas. However, all such meetings will be conducted under supervision of the Chapter's papers and meetings committee.

L. R. Ward, Texas Power & Light Co., chairman of Southwestern Chapter, IES . . .

Officers of the Southwestern chapter, in addition to Mr. Ward, are as follows: G. G. Griffin, vice chairman; and P. M. Rutherford, Jr., secretary-treasurer. Committee chairmen are E. H. Gardiner, Jr., papers and meetings; E. E. Simmer, membership; C. R. Davis, residential lighting; L. T. Anderson, commercial lighting; H. R. Heitzman, industrial lighting; V. J. Graham, store lighting; G. C. Buchanan, street and highway lighting; W. E. Folsom, architectural lighting; A. P. Hammerstrom, sports and floodlighting; and Stanley Zercher, school lighting.

## Reddy Kilowatt Users Pass One Hundred Mark . .

During the past year Reddy Kilowatt and his Humanizing Program, created by Ashton B. Collins of Birmingham, Alabama, has received general acceptance by both domestic and foreign utilities. Although only 57 companies were using the Reddy Kilowatt program at the beginning of 1937, a total of 100 had adopted the program by January 1, 1938.

This total includes companies in Hawaii, and in Canada, Philippine Islands, Brazil, Argentina, Cuba, all parts of the United States and and Mexico, as well.

## Raymond Hunt To Head VEPCO Distribution Department . . .

Raymond Hunt, general superintendent of the electrical and railway departments of the Tidewater Power Company, has accepted the position as the head of the transmission and distribution departments of the Virginia Public Service Company with headquarters in Charlottesville, Virginia, according to recent announcement. Mr. Hunt has been associated with the Tide Water Power Company since 1903 in various capacities.

## North Carolina Chapter, AIEE Elects New Officers . . . .

Marshall E. Lake, of the Duke Power Company, Charlotte, was elected chairman of the North Carolina Section of the American Institute of Electrical Engineers at the section's recent meeting. He succeeds Prof. Walter J. Seeley of Duke University.

Earl C. Dameron of the Durham Public Service Company, Durham, was named secretary-treasurer. New executive committeemen named include J. E. S. Thorpe, Franklin; Albert Milmow, Charlotte; and Fred C. DeWesse, Raleigh.

## Interest On Consumers' Deposits Reduced In State of Georgia . .

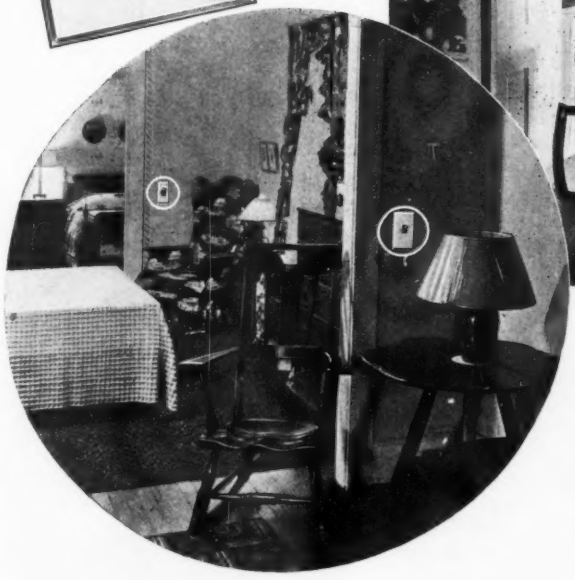
The Georgia Public Service Commission has issued an order effective on January 1 requiring public utility corporations to pay 4½ per cent interest on customer deposits and refund them as soon as credit is established.

The Georgia Power Company will benefit under this order, as it has been paying 6 per cent interest. Their policy has been to refund the deposits after a customer has paid twelve monthly bills without losing the benefit of the prompt payment discount.

# *Wire for the* Path of Light

ARROW all through the house

Plan to put SWITCHES at all room entrances, so a person walks in a PATH OF LIGHT from one room to another! Eliminate stumbling in the dark when passing *anywhere* through the house, or up and down stairs. Install THREE-WAY switches at *both* entrances of a large room, to turn lights on or off at either doorway. This is the new idea of CONVENIENCE — which helps make owners "see the light" in the matter of adequate wiring...Number 6444 Single-Pole Switch; Number 6446 Three-Way, *execute the idea!*



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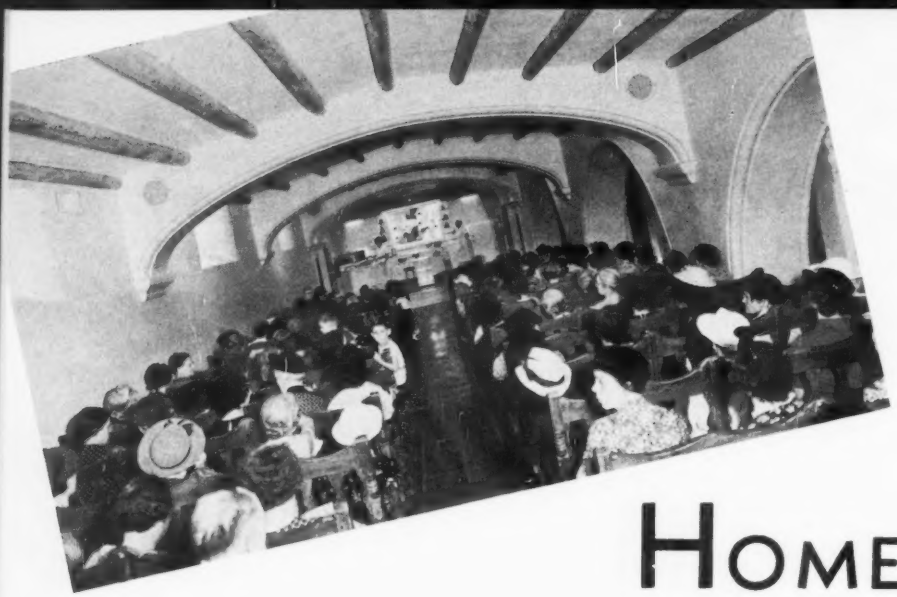
THE ARROW-HART & HEGEMAN ELECTRIC CO. HARTFORD, CONN.



# UNIQUE HOME for HOME SERVICE

By Nell Read

Home Service Supervisor
San Antonio Public Service Co.

SO SUCCESSFUL has been the policy of the Home Service Department of this company that in a period of five years it completely outgrew its original home and recently moved into new and perhaps the most unusual quarters for a home service department in the United States—an authentic Spanish Patio which occupies the entire ground floor of the San Antonia Public Service Company building.

Situated in a section of the United States where the Mexican and Spanish motifs strongly influence architecture, the builders of this department chose bits of the best of the Spanish and Mexican influence and blended it harmoniously with the ultra modern, streamlined kitchens to provide a perfect setting for a modern bureau of homecraft encompassed in the romantic environment of a Spanish Patio.

Let us take you on a tour of the new Spanish Patio.

One flight of "red earth" colored tile steps and a turn to the right brings the narrow, long, arched chapel-auditorium into view. The quiet, awe inspiring atmosphere of an old Spanish mission is gained by the sunlight glancing in through yellow glass windows over white stuccoed walls and playing on a red tile floor.

The beamed ceiling and lofty arches carry out the Spanish atmosphere and cleverly conceal the indirect lighting, the air conditioning ducts, and the loud speakers. Specially designed Spanish wood benches provide comfortable, adequate seating capacity.

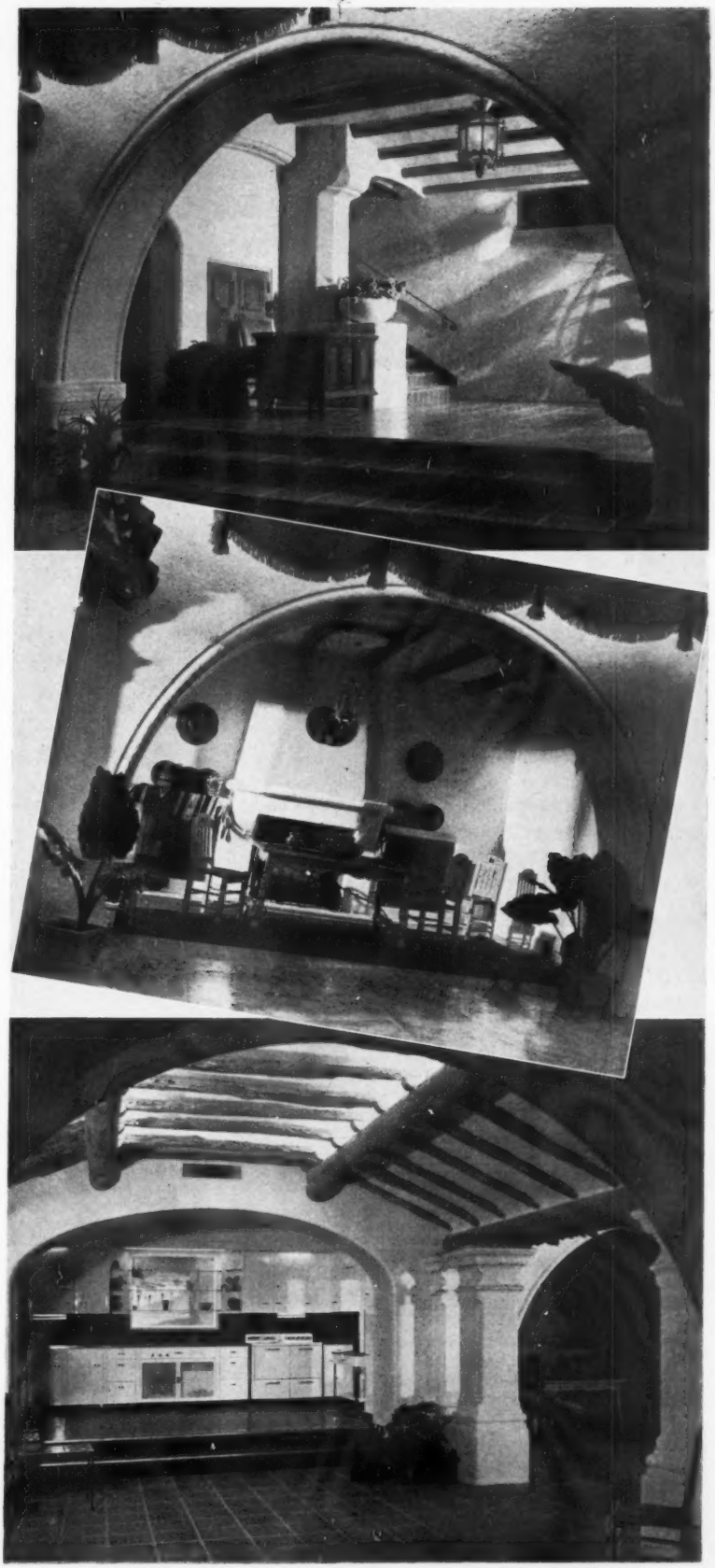
The demonstration-stage kitchen is set at the end of the chapel-auditorium. Streamlined white steel cabinets with stainless steel counter tops and a sink unit with electric dishwasher and disposal are set across the back wall of the stage. The range, refrigerator and cabinets on rollers are placed along the side walls. A Spanish color scheme of dull red linoleum floor bordered with black, yellow tile wainscoting, light green walls and ceiling, with accents of Mexican blue glassware on the glass shelves in front of the imitation window, creates a pleasing impression on the audience.

A box in the center floor of the stage conceals a power outlet, a double convenience outlet, and a gas connection. Each side wall has similar outlets, thus equiping completely the platform for either gas or electric demonstrations. Convenient outlets are located on the back wall above the counter top on each side of the sink. The lighting on the stage is supplemented with soffit lighting over the sink, around the picture back of the sink, and under each wall cabinet.

This stage-kitchen is so de-

**R. E. Sivley, manager of the commercial department, is responsible for the home service division policies that have proved so successful since the company discontinued direct sale of appliances. At right, Miss Nell Read, who supervises the home service activities . . . . . .**

**The unique Spanish chapel auditorium in which homemakers hear the story of modern homecraft is shown on the opposite page. At the right: Top, the inviting entrance to the Spanish Patio. Center, the kitchen planning conference room with its colorful Mexican atmosphere where home economists help homemakers plan their dream kitchens. Below, a model kitchen maintained, in addition to the demonstration kitchen in the auditorium, for exhibit purposes.**



signed that all kitchen equipment may be moved off the side walls, a curtain drawn, or moving picture screen dropped over the cabinets on the back wall, clearing the stage for other purposes.

A second kitchen known as the "Model Kitchen" occupies another corner in the department. This kitchen is designed for a display and test kitchen. Its equipment is similar to that of the "Stage Kitchen" except for the fact that the cabinets are built in permanently on three sides.

This dream kitchen provides a model in which the dealers display kitchen appliances, in which cookery tests are made, and in which kitchen planning—the newest professional service of the home service department is promulgated.

The color scheme in this kitchen is also Spanish. An olive green inlay linoleum floor is bordered with a narrow band of yellow and wider band of black linoleum. The wainscoting is of black carrara glass, and the walls and ceiling are of butter yellow. Mexican blue glassware on the glass shelves across the imitation window complete the setting.

The kitchen planning room—a room furnished completely in Spanish style even to an authenic frill on the white stucco fireplace —and the office, also furnished in Spanish style, open out onto a patio.

In one end of the patio is the Spanish tile fountain surrounded by tropical plants growing under the artificial light. An orange colored monk's cloth canopy over the patio conceals the bulbs which create the illusion of an outdoor

(*Continued on page* 56)

# ELECTRICAL APPLIANCE SERVICE

**In this section: Details of a recently constructed model radio service shop. . . . Specialization on stoker repairs and automatic controls results in service volume . . . .**

**Appliance service men are invited to make use of this department for the exchange of ideas on electric appliance servicing. Payment will be made for all material published.**

## Model Radio Service Shop Details . . .

*By R. S. Merkle*
*Hygrade Sylvania Corporation*

FOR more than a year we have been gathering ideas for a model service shop which would combine working efficiency, modern appearance, and moderate cost. From this data, plans have been drawn for a model service shop, which has been installed in a small building on the grounds of the Sylvania plant at Emporium, Pa.

The shop consists of three sections—analysis, repair and office. Just to the left of the entrance a screened cage approximately six feet square is installed where ocillagraph work can be carried on without electrical interference. To make this cage more effective, it has been constructed of two screens insulated from each other. The inner screen is directly connected to ground, while the outer is connected to an electro-static shield included in a one-to-one ratio transformer connection in the a-c circuit entering the cage. The cage is equipped with a-c outlets and a large oscillograph.

On the wall adjacent to the cage, we have installed the repair section. The repair bench is of standard size and height, with plenty of drawer space for tools and small equipment. At the left of the bench is a Sylvania Stock Boy Cabinet holding the working stock of tubes and parts. In the back center of the work bench is a series of meters such as are used in most service shops. These are mounted so that a continuity check can be made as the repair progresses.

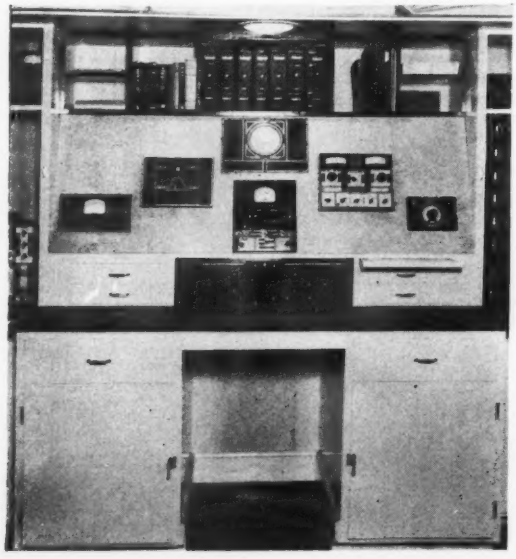
Fastened on the shelf are two stainless steel rods, tapped for set screws to fasten antenna and ground connections. Connections can also be clipped to the rods, since the stainless steel will not show marks.

At the right hand end of the bench is a cabinet in which the electric meter fuse box and junctions of the electric service terminate. An interesting feature of this cabinet is a sliding shelf on which is mounted a shop drill press. When needed, it slides out onto the work bench—when not in use, it is out of sight behind the cabinet door.

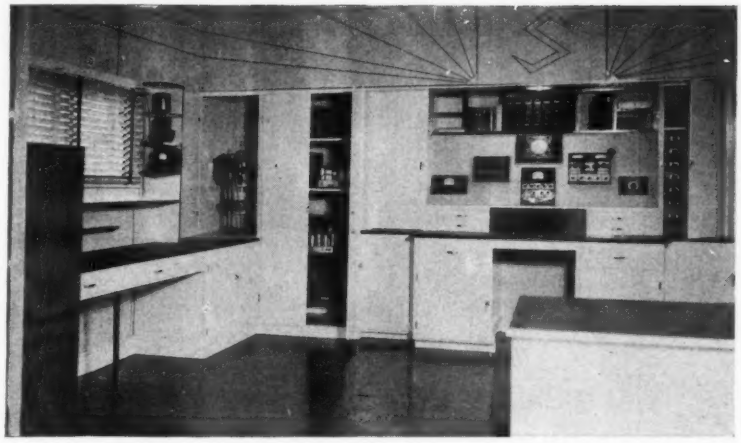
The analysis section, shown in the accompanying photograph, includes a bench or sloping panel for equipment. The panel is built of five-ply wood so that if future changes in equipment are necessary, or a new panel layout is desired, it will not be too expensive. Servicemen who have installed composition panels will appreciate the economy of more easily replaceable material.

The equipment on the analysis panel consists of a universal speaker, tube tester, standard signal generator, small oscilloscope, zero-current voltohmeter and a condenser analyzer. Below the sloping panel is a control panel which includes a-c outlets, outlets for 6 volt and 500 volt d-c, and auto transformer, switches and signal lights. Antenna and ground outlets are also included, by means of two stainless steel rods like those on the work bench, built in L shape for decorative effect.

On either side of the control panel are two drawers for the various connecting cables of the test sets on the sloping panel. Above each set of drawers is a



**A close up of the analysis panel. The equipment consists of a universal speaker, tube tester, standard signal generator, small oscilloscope, zero current volt-ohm-meter, and a condenser analyzer. Below the sloping panel is a control panel which includes a-c outlets, outlets for 6 and 500 volts d-c, and auto transformer, switches, and signal lights. Antenna and ground outlets are included in the form of two stainless steel rods like those on the work bench but built in L-shape for decorative effect. On each side of the control panel are drawers for the various connecting cables of the panel test sets . . .**



One corner of the model service shop. At left is repair bench and at right, analysis panel. Not shown are the office section, screened analysis cage, and customer counter in front. . . . . .

sliding shelf on which charts and operating instructions for the test equipment are fastened.

On each side of the analysis bench are closed cupboards which provide storage for parts, records, and plenty of room for storing sets to be repaired and finished sets ready for delivery. The set storage cabinets are large enough to contain consoles, and also have space for smaller sets and chasses. Above the sloping panel are shelves for technical manuals, reference books, etc.

The office section contains a standard office desk and chair, with lamp, telephone, etc. On either side are closed cupboards for office supplies. Shelves over these cabinets hold bound files of radio magazines, bulletins, and the miscellaneous literature which is so valuable, yet so often contributes to the "mussy" appearance of a service shop.

Facing the entrance of the shop is a counter with cupboards and drawers for stock in the back and a lighted recess in the front for display of tubes, parts, and other items of merchandise.

The color scheme of the shop is brown and ivory, all woodwork being painted in the lighter shade, with dark trim. Tops of benches and counter are covered with brown Masonite. Hinges, latches and handles are chromium, and a strip of molding covered with chromium foil is used as a trim above the analysis bench. All exposed wall surface and ceiling are covered with Celotex in natural color.

A four-foot square of Celotex, backed by an aluminum reflector, provides a modernistic ceiling fixture, using four 75-watt lamps, for general shop illumination. Additional lighting consists of a 75-watt floodlight over the analysis section, two lumiline lamps under the top shelf of the repair section, and a desk lamp.

The dimensions of the shop are approximately 20 feet by 20 feet.

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### Stoker Repair Specialization Builds Service Volume . .

Specialization on stoker repairs and automatic controls has enabled the Fountain City Electric Company, Fountain City, Tenn., to expand its activities into the city of Knoxville and throughout the Knoxville territory.

A large part of the work handled by this company comes from four large companies in Knoxville, all of which are particularly active in the merchandising of automatic stokers.

Although the company specializes in stoker repairs, it also maintains an attractive corner store and shop in Fountain City. In addition, the firm operates an electrical contracting business and merchandises fixtures and appliances.

"We have been in automatic control work for nine years," said Mr. J. F. Bayless, the pleasant proprietor of the firm. "One company for whom we do work was the first to install automatic stokers in Knoxville.

EXPERT
STOKER REPAIRS
When the stoker stops—Phone us. We specialize on controls.
Ft. City Electric Co.
J. F. BAYLESS, Prop.
DAY CALL—6-1518
NIGHT SERVICE CALL—6-2283

"We have one of the oldest control men in Knoxville and that means a great deal in building up such a business. We put new controls on old equipment or redesign controls to fit obsolete equipment. Much of our work is of this type."

J. F. Bayless, Fountain City Electric Co., Fountain City, Tenn., who has built up an enviable business through specialization on stoker service, is shown here at work in his shop . . . . . .

NOT ONLY A GREAT
LINE OF BEAUTIFUL
1938 ELECTRIC RANGES...

BUT ALSO

1938 Kelvinator

# A GREAT PLAN TO SELL THEM!

## Read what Kelvinator is doing to give you a better year . . . on Watt-Watcher Electric Cookery Sales

**YOUR OWN PEOPLE EXPERTS ON ELECTRIC RANGES!**

**1** A capable home economist trains them in demonstrating "Watt-Watcher" Electric Cookery.

**YOUR SALESPEOPLE BETTER EQUIPPED TO SELL!**

**2** Kelvinator provides practical sales-training courses for your salespeople . . . how to find prospects . . . approach them . . . close sales . . . developed with the help of successful Kelvinator salesmen.

**FREE FILMS FOR PROSPECTS!**

**3** Kelvinator furnishes sound slide films that tell the advantages of Kelvinator "Watt-Watcher" Electric Cookery, in a way no woman can forget. Easy to show in your store.

**TAKES THE STORY HOME AND INTO THE KITCHEN!**

**4** Kelvinator has a "visualizer" for you that does a remarkable job of getting the story over, RIGHT IN THE PROSPECT'S HOME.

**PLUS THE GREATEST SALES HELP OF ALL!**

**5** For 1938, Kelvinator has developed the amazing "KONVINCE-HER" . . . an entirely new and exciting selling tool, suitable for individual or group demonstrations, that brings customers to your store . . . brings in sales.

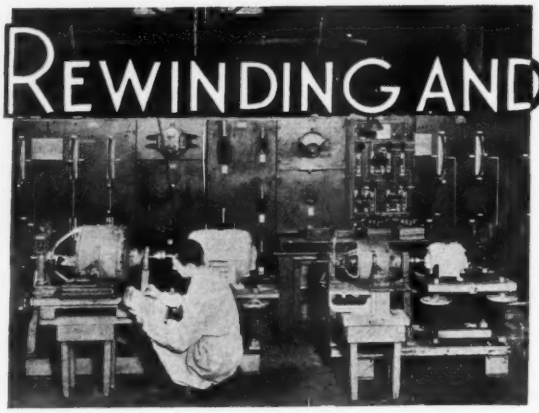
Get the whole story of the Kelvinator line and the Kelvinator program for 1938. Phone your distributor. Or write now to:

KELVINATOR, Division of Nash-Kelvinator Corp., Detroit, Mich.

**CALLED THE "KONVINCE-HER"...** ***and it does! Nothing else like it . . . world's grandest device to NAIL DOWN the story of electric cookery and Kelvinator Electric Ranges. Creates talk . . . pulls in prospects . . . helps*** **close!** ***Learn about it—now!***

# Electric Ranges

# MOTOR REWINDING AND REPAIR



**In this section: Jack Beater describes a handy high - voltage testing transformer which will be found particularly useful in the motor shop . .**

**Motor service men are invited to make use of this department for the exchange of ideas on motor rewinding and repair. Payment will be made for all material published. .**

## Handy High-Voltage Test Transformer .

*By Jack Beater*

EVERY motor shop needs a wide range of voltages for test purposes on motor windings and circuits. Voltages higher than the normal operating voltage of the motor are necessary to show up defects that might otherwise develop soon after a motor is placed in service. High voltage tests will show up weaknesses of insulation, and can be used for the detection of grounds and short circuits of certain types. Such tests are also useful in servicing other makes of electrical appliances.

A testing transformer can be constructed at slight expense and with only a few hours of labor. The transformer described here will deliver approximately 50 to 1800 volts from the secondary when the primary is connected to a 110 volt, 60 cycle line.

The various ranges are obtained by plugging the test leads into different terminals of the tapped secondary. Although it is not necessary to mount the transformer in a test box, such a mounting is desirable for the protection afforded, and the portability obtained.

The first step in building up the transformer is to obtain a set of laminations of the correct proportions. These laminations could be cut from sheets of soft iron, but a better way is to hunt for an old transformer, such as the type used in large radio power packs, and strip off the old winding.

The next step is to make up a wooden form on which to wind the coil. This form should be slightly larger than the exact dimensions of the center section of the core, and slightly narrower than the width of the core bearings, measured the long way. Since each layer of the core laminations will be in two sections the core will be assembled around the coil after the winding has been completed.

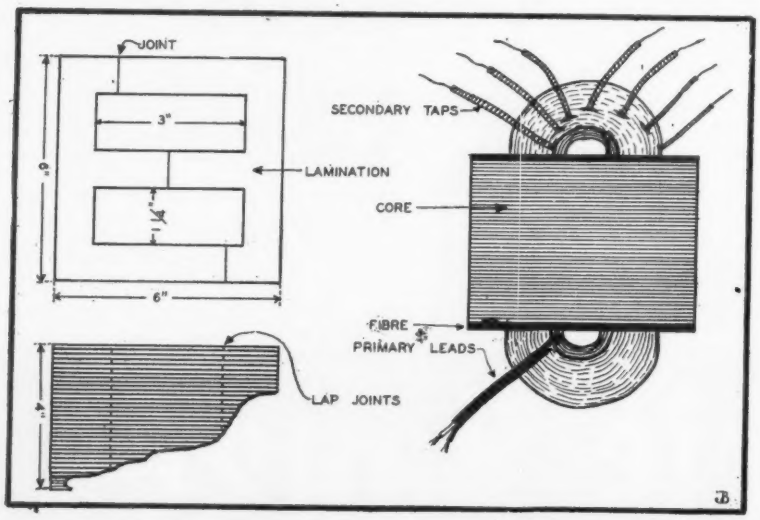



**Fig. 1. Construction details of transformer core and coil.**

Before starting to wind the coil, the form should be wrapped with three or four layers of heavy armature paper, and a fibre washer should be cut to fit each side. The primary coil is wound first and consists of approximately 115 turns of No. 16 double cotton covered magnet wire. Before starting to wind, a well-insulated flexible wire should be soldered and taped to the beginning end of the magnet wire. The primary winding is wound slowly, tightly and evenly on the form, with no "cross-over" or bumps. At the end of the primary winding another flexible lead is soldered and taped to the finish end, and both the starting and finishing leads are brought out at one end of the coil, and are encased in a length of cotton sleeving.

A layer or two of heavy insulating paper should be wound over the primary before starting to wind the secondary. The beginning of the secondary coil should be brought out at the opposite end of the winding from the primary leads, and should consist of a length of fine braided wire covered by small cotton sleeving or varnished tubing. The whole of the secondary winding, other than the tap leads, is wound with No. 26 double cotton covered magnet wire. There are a total of seven

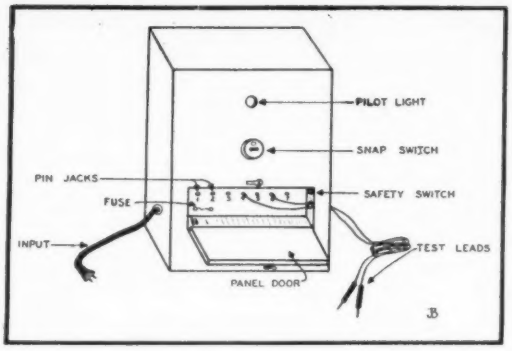



**Fig. 3. The external appearance of a typical transformer test set is shown here. The terminal panel is recessed slightly and covered with a door to prevent injury from contact with high voltage terminals. A safety switch disconnects the primary whenever the door is open. The fuse is mounted on the panel with the terminals which consist of pin jacks such as used in radio work. The pilot light indicates whether the primary is energized.**

secondary taps, and each should be brought out at the same end of the winding as shown in Figure 1.

Fifty turns are wound between the first and second taps. This circuit forms a low voltage winding that is often handy for testing motors, generators or other appliances operating on 6, 12, or 32 volts. After the second tap has been brought out the winding should be covered with one layer of oiled paper or oiled silk, after which the winding proceeds with 150 turns, and the forming of the third tap. Again the winding is covered with a layer of paper or silk.

The winding continues with 250 turns wound between taps, 3 and 4, 350 turns between taps 4 and 5, 450 turns between taps 5 and 6, and 550 turns between taps 6 and 7. This makes a total of 1800 turns on the secondary which should deliver approximately 1800 volts, or about 1 volt per turn under no load.

After the winding has been completed to the full number of turns it is removed carefully from the form and taped lightly, then dipped in varnish and thoroughly baked. The laminated core is assembled around the coil a layer at a time, with the joints staggered alternately between layers. A heavy fibre lamination should be cut for each end of the core so as to avoid the possibility of the sharp metal edges of the core cutting through the tape and into the winding. After assembling all the pieces at the core, bolt them together by means of through bolts.

In a transformer of this type a short between the secondary taps imposes a tremendous load on the primary and will quickly burn out the winding unless it is protected by a fuse. Figure 2 shows a circuit diagram of the completed test outfit and it will be noted that a fuse is included in the primary line. This fuse is a short length of low capacity (2 or 3 amperes) fuse wire connected between two terminals.

The diagram in Figure 2 shows other details of the circuit accessories as recommended for installation in the test kit. The pilot light connected across the primary winding leads informs the operator at a glance when the power is on, or when the fuse has blown. The snap switch is for convenience in throwing the kit in or out of operation. The panel switch is strictly a safety measure to prevent the operator from getting severe shocks when plugging from one tap to another. The switch opens the primary circuit whenever the panel door is open.

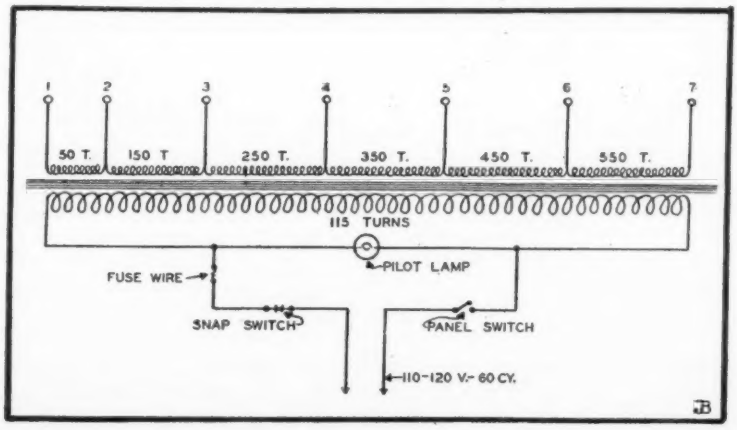



**Fig. 2. Schematic diagram of transformer circuits and connections.**

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### Tennessee Firm Motor Exchange Service Profitable . . . . .

Tennessee Armature and Electric Company, Knoxville, Tennessee, has found their method of furnishing customers a serviceable motor while their own motor is being repaired most advantageous. No charge is made for the loaned

motor except enough to pay for cleaning it up unless some extra work is required. By using this plan, the company has found that rushed work can be eliminated to a great extent. Of course, it results in better service for the customer.

The shops of this company are unusually large. The problem of transporting and handling large motors in the shop has been solved most satisfactorily by the crane shown in the accompanying illustration. Mounted on rollers, the crane can be operated by one man and will handle motors weighing up to 1,000 or 1,500 pounds. It is hand operated, utilizing a reduction gear, with a U-shaped base permitting it to be lowered directly over the motor to be lifted. The roller can be locked so as to make the crane stationary. J. H. Nelson,

superintendent of the company, reports that the crane provides a flexible means of moving and lifting heavy machinery, without the usual limitations of an overhead crane.

## Unique Home For Home Service . .

(*Continued from page* 49)

patio basking in brilliant sunshine.

In this completely air conditioned, indirectly lighted Spanish Patio, the home service personnel conducts its work. The variety of services offered to San Antonio homemakers include:

Homecraft programs; kitchen planning advisory service; appliance operating information; recipe, menu and household hints; party plans and recipes; special diet advisory service; maid training classes; table setting advisory service; radio programs in homecraft; and home calls by a home economist to give operating information for the range, refrigerator and electric mixer.

The program which is opening the new Spanish Patio is called a "Celebrities Series" because nationally known home economists are coming from all over the United States to appear on the program as guest speakers. Helen Ridley, Dorothy Shank, Nancy Pullin, Polly Gade, Alma Chambers, and Leatha Evans Hardwick are among the celebrity guest speakers.

Because this company voluntarily ceased its direct sale of appliances six and one-half years ago and depends entirely upon a dealer cooperative merchandising plan to build domestic load, the operation of this home service department has been based upon a judicious balance between the three home service objectives: (1) the promotion of good relations between the utility company and the customer; (2) the promotion of the sale of more gas and electric service by educating the customer to the practical uses of the appliance; and (3) the promotion of the sale of modern gas and electric equipment to the homemakers either directly or by suggestion in order to contribute its share to the load-building program.

This policy requires, first of all, that the services of the home economists be of a professional nature. The homemaker is left with the impression that the home economists are professional advisers in home-craft who because of careful training and experience with the gas and electric equipment are qualified to help the customer with her problems. Under no circumstances is the customer handled in a manner which would tend to create a fear that the home economist have a motive other than that of rendering an efficient professional service. However, the suggestion is frequently and tactfully dropped that a beautiful new range or other piece of modern equipment would greatly enhance an otherwise attractive kitchen and that it would afford the customer a greater feeling of pride in her kitchen not to mention the release of time and the perfection of her cooking.

A harmonious feeling of confidence in the utility company and its representatives is the result of this professional attitude. Coupled with this is an increased use of electricity or gas because the customer has gained greater confidence in the use of the new appliance and will therefore use it more frequently,

Nor is the sales promotion side of the home service objectives overlooked. In a company which operates on a completely cooperative dealer merchandising plan a professional attitude of the home service department is found to be the most effective. Sales assistance of a subtle nature is most far reaching in its results.

Sales assistance of a more tangible nature is also offered the dealers of this city. For example, cooperating dealers are invited to display kitchen appliances in the "Model Kitchen" in the home service department for a limited time. Every homecraft program in the "chapel-auditorium" is prepared with the underlying theme in mind of promoting sales of this modern equipment in an irresistibly perfect kitchen, thereby ultimately increasing the sale of appliances and the gas and electric service as well.

Arousing interest and urge among the customers to buy modern appliances is only one of the dealer aids which this professional type of home service offers. In addition, the services of the home economists are available to the dealers for sales follow-up calls on appliances, for special complaint calls, and as instructors for salesmen's cookery and appliance operating classes. This company has a firm conviction that home service rendered from a professional angle can be an even more powerful sales promotion tool than is possible from a home service personnel which has for its primary effort the actual sale of appliances.

### New Rate Schedules Announced By Virginia Company . . . .

Changes in a number of electric rate schedules were announced by the Virginia Electric & Power Company recently to become effective January 1, 1938. Among the rates changed is that designated as residential service schedule No. 1. The new rate will consist of a first block of 50 kwh at 5c each, the next 50 kwh at 4.25c each, next 50 kwh at 3c each, and a charge of 1.5c per kwh for all in excess of the first 150 kwh.

Changes were also announced in general service schedules No. 3 and No. 5. The latter schedule includes a maximum load charge of $10 for the first five kwh of maximum load and $2 per kw for all load in excess of the first 5 kw. This rate formerly included a $20 charge as the minimum for the first 10 kw.

### Rates Reduced In Jacksonville

A reduction in electric rates for domestic consumers, effective in April, has just been announced.

Under the new domestic rate schedule, the first block of 35 kilowatt hours will be reduced from 7 to 6 cents. The balance of the schedule will remain, as at present, as follows: next 40 kwh at 5 cents each, next 225 kwh at 2 cents each, and 1½ cents each for all over 300 kwh per month.

DURING 1938 MORE NEW

# UNIVERSAL

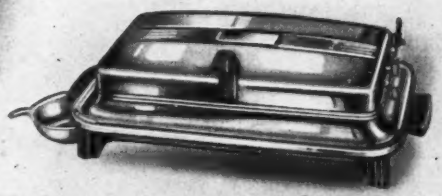
## ELECTRIC APPLIANCES

Better made for greater sales, UNIVERSAL Electrical Appliances for 1938 present new eye-appealing modernistic designs—latest conveniences—bigger values and are priced to reach a wider market than ever before.

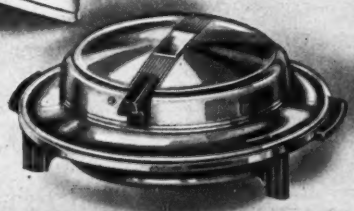
From electric refrigerators down to the small boudoir iron, the UNIVERSAL name means highest quality and guaranteed service to millions of housewives everywhere.

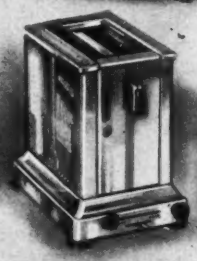
UNIVERSAL

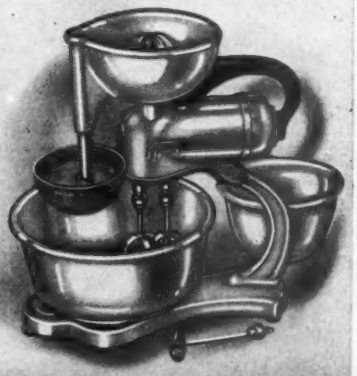
the oldest name in the household field appears on the largest line of both small and major appliances in the world.











LANDERS, FRARY & CLARK, NEW BRITAIN, CONNECTICUT

# Timely News of the ELECTRICAL ASSOCIATIONS . .

### Record Attendance Features Salisbury Meeting . . . .

A record turnout of 102 members of the Delmarva Electric Association attended the first meeting of 1938, held at the Wicomico Hotel, Salisbury, Maryland, January 10th.

The afternoon session of the meeting was devoted to the showing of electrical manufacturers and jobbers displays. Represented were: Crouse Hinds Company, Pass & Seymour Company, The Square D Company, Anaconda Wire & Cable Co., Wiremold Company, Arrow Hart & Hegeman Co., Roland Electric Company, and Rawlplug Company.

These manufacturers displayed all types of electrical contracting material such as switches, motor controls, wiring devices, cable, small size wire, flood lights and conduit fittings.

The evening session was dedevoted to a banquet and a presentation of the "Adequate Wiring Program," which is being sponsored nationally by the Anaconda Wire and Cable Company. The introduction of the speakers was made by Sidney Greenfield, president of the Greenfield Electric Company, Baltimore, Maryland, distributors of wiring materials.

The speakers who presented the program were James A. Smith, sales promotional manager, and S. J. Rosch, manager of insulated products development, both of Anaconda Wire and Cable Company.

A visual demonstration on adequate wiring was also presented by J. A. Watts of the Black and Decker Company.

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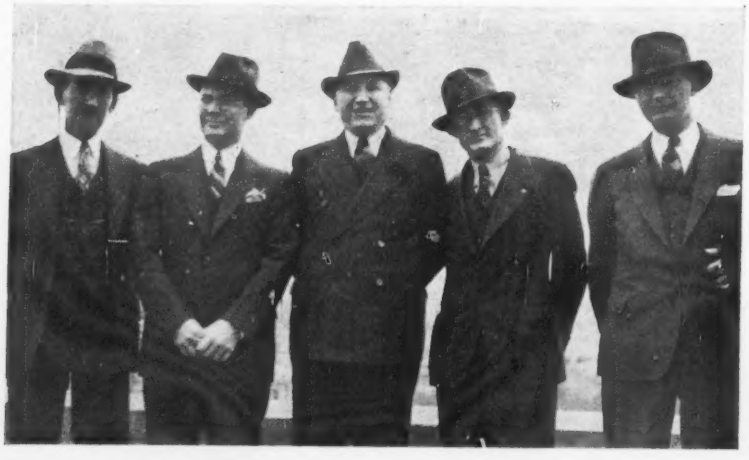
### New Officers Elected For Dallas Electric Club . .

The Dallas Electric Club, Dallas, Texas, held its annual meeting at the Baker Hotel, Dallas, December 27. Inasmuch as this was election day, past presidents were honored by recognition from the Chair and each past president present responded with a short talk.

G. B. Richardson, of Texas Power & Light Co., was elected president, succeeding Gibbs A. Dyer. Other officers elected are as follows: first vice president, Frank Hamm; second vice president, Perry Davis; secretary, Walter C. Blair (re-elected); and treasurer, H. O. Worthington (re-elected).

The executive committee is composed of W. R. Burns, Guy P. Griffin, W. H. Thomson and L. T. Blaisdell, hold-over members; and G. L. MacGregor, R. G. Berle, Glenn C. Wasson, W. H. Duls, J. P. Griffin and G. A. Dyer, new members.

The club's annual mid-winter dinner dance was held the same evening at the Dallas Athletic Club.



Dallas Electric Club elected new officers recently. Left to right are: W. C. Blair, secretary; Gibbs A. Dyer, retiring president; G. B. Richardson, president; Frank Hamm, first vice president; and G. C. Wasson, newly elected member of executive committee. Not shown in the photograph: Perry Davis, second vice president; H. O. Worthington, treasurer; and the following new board members: G. L. MacGregor, R. G. Berle, W. H. Duls, J. P. Griffin. . . . . .

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### Electrical Association of New Orleans Elects Officers . .

Fred W. Stevens, local manager of Allis Chalmers Company, was chosen president of the Electrical Association of New Orleans at its annual dinner meeting held recently.

Other officers elected were: R. Viener, Jr., executive vice president; H. E. Meade, vice president, wholesalers and utilities; W. B. Wands, vice president, refrigeration; W. J. Barnes, vice president, electrical contractors; George Hero, vice president, air conditioning and ventilating; W. E. Clement, director of publicity; George J. Segal, secretary; and I. W. Tufts, treasurer.

The following executive committee was chosen: E. N. Avegno, W. J. Barnes, J. O. Kaelin, Hutson Colcock, Ferdi Stern, W. Hobson, T. A. O'Sullivan.

Ralph Golt, retiring president, who presided, reviewed the activities of the association during the past year and made valuable suggestions with regard to the best methods of carrying on the work. George J. Segal, secretary, discussed his attendance at the recent Cleveland Electrical League meeting.

A short talk was made by W. E. Clement on "Rural Electrification and Farm Taxation."

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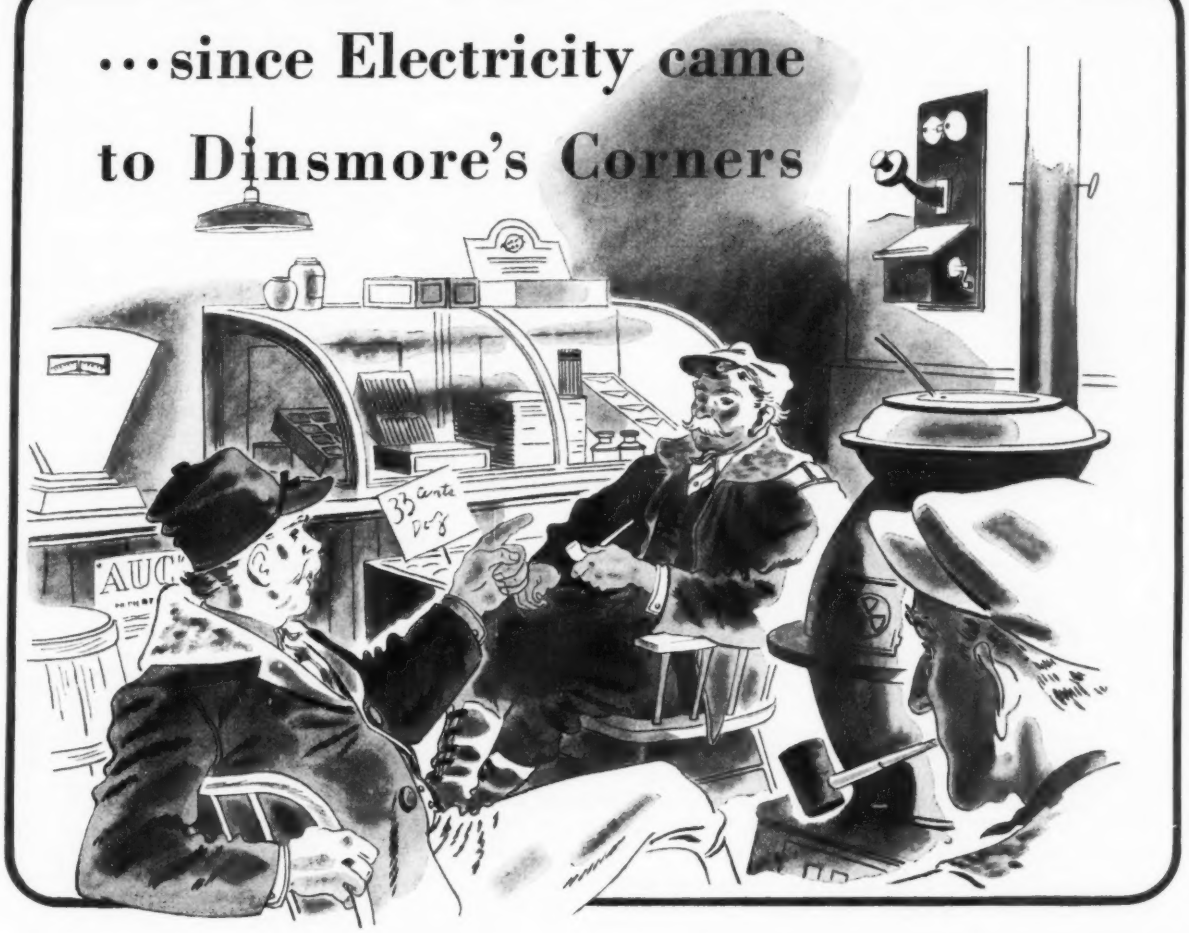
### Manufacturers' Representatives Club Elects Officers . . .

Ernest T. Loyd, of Atlanta, was elected president of the Southeastern Electrical Manufacturers' Representatives' Club at a recent business meeting. Other officers elected for the ensuing year are W. T. Watkins, vice president, and C. C. Schoen, secretary-treasurer, both of Atlanta.

More than two hundred persons attended the annual Christmas dinner dance of the club.

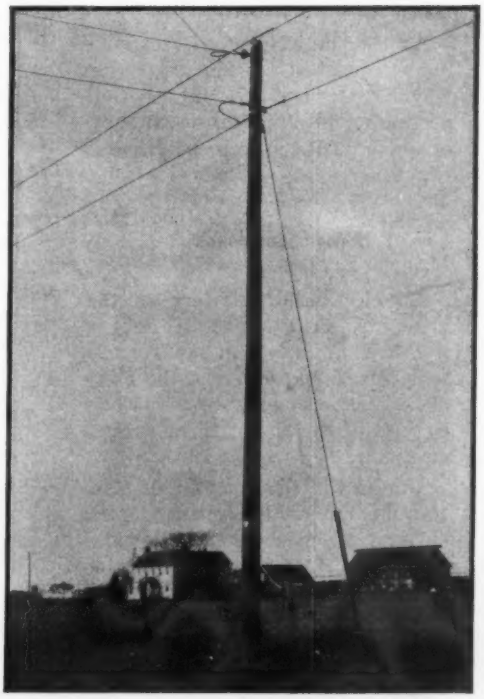
# ...since Electricity came to Dinsmore's Corners



They're still marveling at the way those power lines went up. Diggers and pole setters moving rapidly across country; wire-stringing crews on the job a few days later. And, *presto*, this once isolated section of rural America has electricity!

That's the way it goes when you're building a line with A.C.S.R. Up quickly and easily, and up to stay.

Aluminum Cable Steel Reinforced combines in a single conductor the light weight and conductivity of Aluminum and the strength of an unusually strong steel core. A.C.S.R. standards include methods and devices proved by thousands of tests, by years of actual service. Data of value to design engineers and construction men will be supplied gladly upon request. ALUMINUM COMPANY OF AMERICA, 2164 Gulf Building, Pittsburgh, Pennsylvania.



**A·C·S·R**

**FOR RURAL LINE**

**FOR POWER TRANSMISSION**

ALCOA

### Electric Promotional Committee Organized In Roanoke . . .

Organization of a local electrical industry promotion committee for the city of Roanoke, Virginia, was completed at a meeting held recently at the Patrick Henry Hotel. Proposed activities were discussed at this meeting and a permanent committee was formed which will include the following members:

W. E. James, Graybar Electric Company, Roanoke.
Geo. D. Hunter, Geo. D. Hunter Company, Roanoke.
A. R. Hines, General Electric Company, Roanoke.
W. I. Whitefield, Appalachian Elec. Power Company.
C. D. Johnston, Richardson-Wayland Elec. Corp.
J. W. Johnson, Grand Piano Company, Roanoke.
R. R. MacDonald, Westinghouse Supply Company, Roanoke.
H. B. Shaughnessy, R. S. Montgomery, Inc., Roanoke.
L. H. Engelby, Engelby Electric Company, Roanoke.
W. Henry Dowdy, Dowdy Electric Company, Roanoke.
J. F. Crutchfield, General Electric Supply Company.
R. W. Craft, Westinghouse Mfg. Company, Roanoke.
J. M. Richardson, Richardson-Wayland Elec. Corporation.

R. R. McDonald was elected chairman and H. B. Shaughnessy was elected secretary. The board of governors will include, in addition to the two officers, W. I. Whitefield, A. R. Hines, and W. Henry Dowdy.

Another meeting of the committee was planned for January 10, at which time by-laws, information pertaining to electrical shows, and other activities were to be discussed.

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### Fowler Chosen To Head Memphis League . . .

An election of officers of the Memphis, Tenn., Electric League was held January 6 at the Tennessee Club. J. A. Fowler, of the Fowler Electric Company, was re-elected president for the third successive time.

Others elected were: G. O. MacFarlane, Memphis branch of the General Electric Company, vice president; H. G. Street, who begins his twenty-second year as treasurer; and J. J. Brennan, secretary, who has served in that capacity for twenty years.

Reports were heard on the successful outcome of the Christmas Outdoor Lighting Contest, which was sponsored jointly by the League and the City Beautiful Commission.

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### Unique Lighting Plan Launched By Electric Association . . .

The Electrical and Gas Association of New York has launched a program which will provide certificates of merit for lighting installations to consumers of electric service who have installed meritorious installations of wiring and lighting. The award program is designed to further the modernization projects of the electrical industry.

A lighting installation to be eligible for an Award of Merit must: conform to the standards of the IES table of foot candle levels as published; conform to IES brightness ratios and measures; conform to the wiring standards of the Industry Committee on Interior Wiring Design; and conform to the standards of the Electrical and Gas Association of New York, Inc., which shall judge the merit of every installation which is submitted for consideration from the point of view of effectiveness as well as efficiency. The effectiveness of installations may be judged from a commercial, industrial, decorative or sales point of view.

The award certificates will be presented to the owners of the premises where an installation is awarded a merit citation, with duplicates to the electrical contractor responsible for the installation.

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## New Electrical Books

### National Electrical Code Handbook . . . . .

By Arthur L. Abbott. Published by McGraw-Hill Book Company, Inc., New York City, New York. 663 pages, semi-flexible binding, illustrated. Price, $3.00.

The fourth edition of Abbott's National Electrical Code Handbook, fully revised to cover changes and additions in the 1937 National Electrical Code, brings to the electrical industry a helpful and time-saving text and reference book on the National Electrical Code.

The purpose of the book is to give the electrician a detailed key by which he may understand the code and do work in accordance with it. An effort has been made to make every code rule clear and understandable. Comments, explanations, diagrams and sketches have been inserted wherever required.

The book has been arranged in such a way that the reader can find in a moment all the rules applying to a given device or method. For convenience, the contents are divided into six general parts. These parts are as follows: definitions and general provisions; types of wiring approved under given conditions; installation of materials and apparatus; general requirements for wiring installations; special installations and equipment; and construction of materials, devices, fittings and equipment.

In addition to the six principal sections of the book, a section has been added which includes all tables containing data that must be referred to by inspectors, contractors, and engineers.

Although the book was prepared for the use of electricians, it will also prove of great value to inspectors, electric utility engineers, and others interested in electrical construction work.

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### Fundamentals of Engineering Electronics . . . . . .

By William G. Dow. Published by John Wiley and Sons, Inc., New York, N. Y. 604 pages, illustrated. Price, $5.00.

Although there are a number of publications treating upon electronic circuit studies, there has been a distinct need for an authoritative book emphasizing the internal operating principles of electronic devices. This need has been fulfilled admirably by William G. Dow, University of Michigan, in his recently published "Fundamentals of Engineering Electronics."

In the author's own words, this book is an outgrowth of his teaching experience and in its preparation he has attempted to maintain a proper balance between two underlying objectives: (1) To give the reader a realistic and quantatively usable conception of the principles that govern the internal behavior of electronic devices and (2) to familiarize the reader with methods of circuit analysis customarily employed in connection with the most common engineering applications of electronic devices.

The book has been especially designed for use in full-year courses for undergraduate or graduate students, but it is anticipated that this book will also find a place as a reference work for engineers in industry.

Although the author has developed his subject to some extent by reasoning from purely physical concepts, a large part of the subject matter requires mathematical analysis and mathematical methods have been used freely. The reader should be familiar with higher mathematics.

# Timely News of the ELECTRICAL WHOLESALERS . . .

## Graybar Jacksonville Office To Operate As A Main House . .

The Jacksonville branch of the Graybar Electric Company is scheduled to operate as a main house beginning January 1, 1938, with Savannah, Miami, Orlando, and Tampa as branch offices.

Douglas Wallace has been appointed district manager with headquarters at Jacksonville. Mr. Wallace came with the company in 1922 as assistant accountant at Seattle. Within six years he was made a senior accountant and the following year became assistant secretary as well. In 1934 he was transferred to Dave O'Brien's department with the title of assistant general merchandising manager.

R. C. Litchfield and G. M. Antrim have been appointed assistant general merchandising managers reporting to D. H. O'Brien. Mr. Litchfield started his career with Graybar as an accounting student in 1923. For the next ten years he worked in various departments at headquarters. In 1933 he was transferred to Varick Street, New York as a member of the credit department. In 1934 he went to Syracuse as service supervisor. Then, in 1935, he was transferred to Atlanta as merchandising operating manager.

George A. Antrim has been with the merchandising department since 1928. He first came with the company in 1904 as stock clerk at Kansas City. He was a member of the Kansas City organization until 1925. In 1926 he went to Chicago in the general sales department and remained there until his transfer to the general department in 1928 where he has been associated with Mr. O'Brien ever since.

Douglas Wallace R. C. Litchfield George A. Antrim

## West South Central States Lead In Wholesale Trade .

The dollar volume of wholesale trade declined about 3 per cent during November as compared with November, 1936, and the rate of collections on accounts receivable was slightly lower than last year, according to report from wholesalers cooperating in the monthly joint study of the National Association of Credit Men and the Bureau of Foreign and Domestic Commerce.

The electrical supplies business was one of the six out of 22 trade groups listed in this report which recorded sales increases over last November.

Electrical wholesaler sales in the South Atlantic states during the month of November 1937 were unchanged from sales recorded during November 1936, but decreased 4.9 per cent below sales for October 1937. Continuing the trend of recent months, electrical wholesalers sales in the West South Central States were 16.8 per cent above sales for the same month of last year.

## Kelvinator Distributor Announced

Among new commercial distributors for Kelvinator Division, Nash-Kelvinator Corporation, announced recently by J. A. Harlan, sales manager of the commercial division, is the Florida Sales Corp., Miami.

**Shown here are two views of the series of "Expositions" conducted by General Electric Supply Co., of Texas, in San Antonio, Houston and Dallas, in connection with the introduction of the 1938 appliance lines. The exhibits included commercial equipment as well as household appliances. The displays were arranged most attractively and attracted a large number of visitors . . . .**

# OUTLOOK for 1938

## As Wholesalers See It

ECONOMIC conditions over the South give reasonable assurance that business volume the coming year will compare favorably with that of 1937, according to an analysis of comments received the middle of January by the publishers of ELECTRICAL SOUTH, from leading southern wholesalers in the electrical, hardware and automotive fields.

Following are typical comments received from electrical wholesalers, and from a few of the wholesalers in other trade lines who are distributors of electrical appliances:

**Harold Wright, The Riechman-Crosby Co., Memphis, Tenn.:**

"Despite the acknowledged business recession the latter part of 1937, our territory set a new record, or next-to-best record, on electrical equipment and wiring supplies.

"Since January 1 we have been agreeably surprised at the increased business on several of our lines for this time of the year.

"From the general outlook for prospective business in 1938, we are of the opinion that the year as a whole will equal 1937, if not exceed it greatly."

**J. P. Hamblen, Southern Electric Supply Co., Houston, Texas:**

"Our prospects for business in 1938 look better than they have for a number of years. There is now contemplated for Houston and trade territory, over $5,000,000 of building, which consists of a $2,000,000 city hall, $1,000,000 Armour packing plant, $50,000 dormitory at Texas A & M College, $250,000 orphan's home and numerous other small warehouses and factories, in addition to any number of residences. We feel very good about conditions."

**F. B. Stern, Interstate Electric Co., New Orleans, La.:**

"On December 31st our business was considerably ahead of 1936. We are looking forward to a continuation of good business, especially in the electrical department. We expect this to be as good as in 1937."

**W. W. French, Moore-Handley Hardware Co., Birmingham, Ala.:**

"I feel in looking over the situation that we in the South have better prospects for the next few months than the country as a whole.

"In Birmingham we have the steel mills running at 65 per cent capacity against a tremendously smaller percentage with which everyone is familiar for the country as a whole. This not only makes the mills themselves active, but the production of raw material is proportionately increased. Also, we have the new construction under way of the Tennessee Coal, Iron and Railroad Company and, in a smaller measure, of the Republic Steel Company.

"We are beginning the year with the belief that there is going to be a volume of business which the jobbers would call 'satisfactory' and 'very good' except that they are very naturally comparing this volume with the volume of the first quarter of 1937, probably the best three months that they have seen in seven years."

**G. T. Marchmont, Graybar Electric Co., Inc., Atlanta, Ga.:**

"Our business immediately following Christmas is relatively quiet as a rule, but so far this month our orders compare favorably with those received during the same period in 1937 and 1936, which encourages us to feel that the sharp decline that we experienced in December may mean that the worst has passed and that we have started in for a good year."

**Tom Glasgow, Glasgow-Stewart & Co., Charlotte, N. C.:**

"Our home appliance division is some 14 per cent ahead of the same number of billing days for January of last year, and our entire business is some 11 per cent ahead.

"We do not feel that the present depression is by any means ended or over. We do feel, however, that there is definitely a more encouraged and optimistic sentiment and atmosphere throughout this area generally, and we believe that barring some unusually radical and alarming news coming out of Washington, there should be a steady improvement in the fundamentals of business."

**T. G. Beckett, Beckett Electric Co., Dallas, Texas:**

"Our business for 1937 was ahead of 1936. The prospect for 1938 is very satisfactory."

**R. S. McDonald, McDonald Electric Co., Inc., Miami, Fla.:**

"We had a very satisfactory year in 1937, and 1938 is starting out quite satisfactorily. We anticipate another good year if we get out and work hard for it."

**R. A. Clark, General Electric Supply Corp., Atlanta, Ga.:**

"At the moment we are unable to forecast what the new year 1938 holds for our district. However, our attitude is no different from that position in which we have always found ourselves at the beginning of a new year. We plan to be alert and aggressive, and hope to secure a reasonable share of the available business which comes up in our territory. We are asking our representatives to be of an optimistic frame of mind.

"In other words, we must do our part; and, as for the rest, we will have to take our chances."

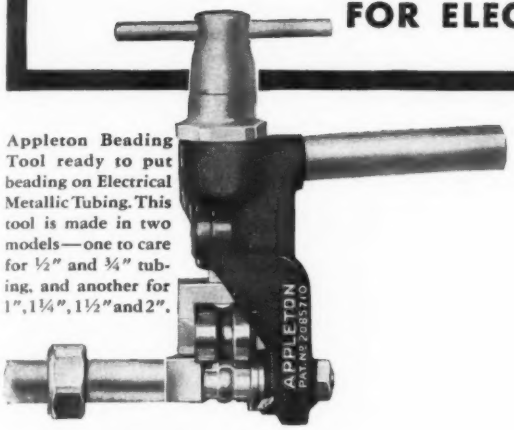
**Mark Lyons, McGowin-Lyons Hardware and Supply Co., Mobile, Ala.:**

"Immediate business is fairly good—about as good as we could hope for under present conditions. This, of course, may be a peculiar local situation, owing to the fact that Mobile has three very large new industries now in process of construction and this, of course, is creating a considerable amount of new business in our community.

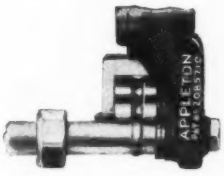
"As I see the picture, business for the first few months of this year will probably be something less than the first several months of 1937; but I believe that as we get farther into the new year, business will improve, and I am very hopeful that the latter months of 1938 will be equally as good, if not better, than 1937."

# NOW...A WATERTIGHT, PERMANENT JOINT

## FOR ELECTRICAL METALLIC TUBING




Appleton Beading Tool ready to put beading on Electrical Metallic Tubing. This tool is made in two models—one to care for ½" and ¾" tubing, and another for 1", 1¼", 1½" and 2".




This illustrates beading on end of tubing. Note cap (or nut) must be put on tubing before bead is made.

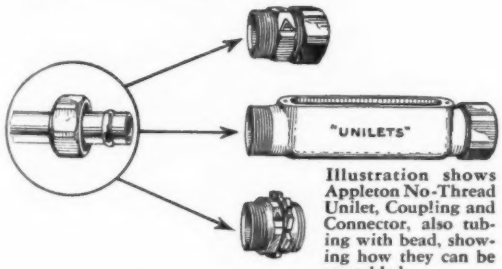
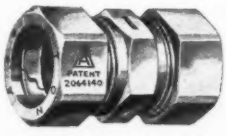



Illustration shows Appleton No-Thread Unilet, Coupling and Connector, also tubing with bead, showing how they can be assembled.




Regular Approved Watertight Coupling for use with Electrical Metallic Tubing.

Regular Approved Watertight Connector for use with Electrical Metallic Tubing.

### *USE NEW*

## APPLETON BEADING TOOL

**(Patent No. 2085710)**

● Here is a simple and convenient tool for insuring a permanent watertight joint with electrical metallic tubing. Tubing beaded by the Appleton Beading Tool is easily connected to Appleton No-Thread Unilets, Couplings and Connectors as designed for use with electrical metallic tubing. This beading insures a watertight job and a connection that is unaffected by vibration or severe operating conditions.

The tool is placed on the end of the tubing with the lower roller inside the tubing. Then, by turning the handle and revolving the tool around the conduit five or six times, a proper bead will be formed. By placing the end of this tubing into any conduit hub of an Appleton No-Thread Unilet, Connector or Coupling designed for electrical metallic tubing, by removing the gripping ring and tightening the nut, a most rigid and watertight connection is secured. *It will not pull out.*

## NEW LOW PRICES

### ON APPLETON CONNECTORS AND COUPLINGS

The prices on Appleton Connectors and Couplings have now been greatly reduced. Through years of experience Appleton has developed these all-purpose fittings, and due to unexcelled engineering and manufacturing facilities can now offer them at unusually attractive prices. Write for new price sheets.

***Write for further information***

# APPLETON ELECTRIC COMPANY

**1712 WELLINGTON AVENUE • CHICAGO, U. S. A.**

NEW YORK—76 Ninth Avenue
SAN FRANCISCO—655 Minna Street
LOS ANGELES—340 Azusa Street
DETROIT—7310 Woodward Avenue
ST. LOUIS—420 Frisco Building
ATLANTA—203 Luckie St., N. W.
CLEVELAND—214 Hippodrome Bldg.

# Timely News of the ELECTRICAL MANUFACTURERS . . .

## Norge Schedules National Sales Training Program .

Establishment of a new educational division to assist distributors and dealers in training retail salesmen has been announced by P. B. Zimmerman, vice-president in charge of sales for Norge Division Borg-Warner Corporation. E. R. Lovegren, formerly Norge district manager with headquarters at Chicago, has been appointed to head the new division. William B. Burruss of New York has been retained as special sales consultant.

Norge has established the new Educational Division, said Mr. Zimmerman, with the realization of the definite need for more thorough retail sales training. Aim of the division's activity will be not only to establish enthusiasm in the salesman over his personal opportunity to profit, but also to help him to attain complete understanding of the products he is selling and a full realization of the social significance of the work in which he is engaged.

## Frigidaire Convention Groups Hold Regional Meetings . .

Thirty six conventions were held in late January and the first few days of February for the more than 20,000 men who make up Frigidaire's national sales organization, according to Frank R. Pierce, manager, household division, Frigidaire Division, General Motors Sales Corporation, and general chairman of conventions.

Three convention parties were organized to conduct the meetings which covered practically the entire United States.

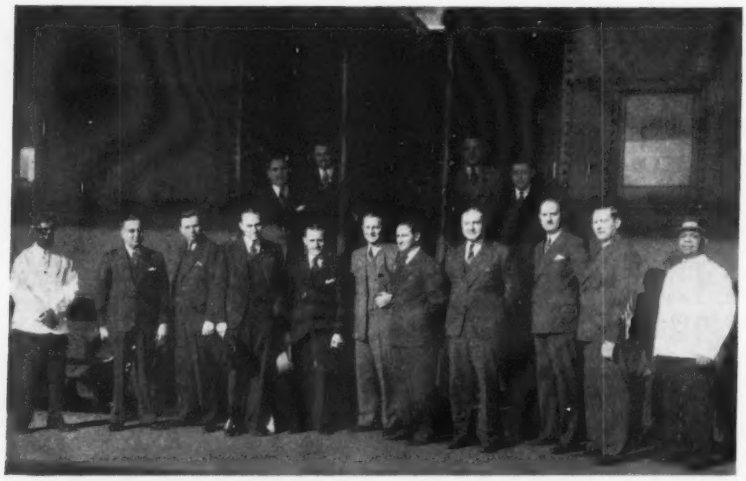
A convention crew headed by W. I. Buchanan, sales manager, Laundry Equipment department, held its first meetings in Atlanta, Georgia, January 18. This same crew held meetings in Tampa, Florida, New Orleans, Louisiana, Memphis, Tennessee, Oklahoma City, Oklahoma, and a number of cities in the Middle West.

Another convention party, headed by Lee A. Clark, household advertising and promotion manager, held its first meeting at Roanoke, Va., followed by meetings in Baltimore, Md., Richmond, Va., Norfolk, Va., and various cities along the Eastern Coast.

A third convention group, headed by Ellsworth Gilbert, east central zone manager and convention production director, started its schedule with a meeting in San Antonio, Texas, after which it proceeded to cities along the Pacific Coast and in the Northwest.

## American Steel & Wire Co. Executive Dies . . . . .

James S. Phifer, for the past twenty-seven years superintendent of the Allentown, Penna., plant of the American Steel & Wire Co., died recently of a heart ailment which had incapacitated him for several months.



These membes of the Frigidaire Division of General Motors convention crew will travel the central and southern parts of the United States. They are, left to right, first row: W. I. Buchanan, sales manager laundry equipment department; Frank G. Lyons assistant director of public relations; F. H. Peters range promotion department; J. A. Nitzelfelt laundry equipment division; C. A. Hughes, household sales staff; H. M. Kelly, apartment house sales manager; H. H. Hanft, commercial research department; D. P. Weisner, range division; and P. H. Brennan, manager, national user's department. On the steps are E. E. Spriggs, Great Lakes zone manager; M. D. Weisenbarger, commercial department; E. H. Wagner, household advertising department and Jack Davy, household advertising. . . . . .

## York Enters Residential Air Conditioning Field . . .

The York Ice Machinery Corporation, said to be the world's largest manufacturer of air conditioning and refrigeration equipment, will now enter the residential heating and air conditioning field according to an announcement by S. E. Lauer, vice president and general sales manager.

York engineers have been working for some time on the development of a complete line of residential equipment that will include oil and gas fired boilers for use with split system conditioning and gas and oil fired air conditioning furnaces. Flexibility is a feature of the several models, designed to meet conditioning needs for winter or summer. The designs of the system are such that the purchaser may install winter conditioning and later add summer conditioning.

## Westinghouse Fellowship Will Aid Dielectric Research . .

Dr. Edward R. Weidlein, director of Mellon Institute, Pittsburgh, has announced the establishment of an industrial fellowship by the Westinghouse Electric and Manufacturing Company for the study of problems in the field of dielectrics and electrical insulation. Dr. Robert N. Wenzel, a member of the Mellon Institute research staff since 1927, has been appointed fellow in charge of this project.

The dielectrics fellowship has as its general objective the development of improved insulating materials and processes for application to equipment of Westinghouse manufacture, and it brings the facilities of Mellon Institute into cooperation with those of the Westinghouse Research Laboratories at East Pittsburgh in insulation research.

## Standard Electric Stove Co. Plans New Factory . . .

Having outgrown the plant site which it has occupied since its organization twenty-five years ago, the Standard Electric Stove Company, Toledo, Ohio, announces that arrangement have been made for increasing its production capacity by doubling its floor space, installing additional machinery and equipment to increase production.

The new facilities will be completed as quickly as possible, but until ready for occupancy, manufacturing will continue in the present plant.

The Standard line for 1938 consists of all domestic sizes of ranges in improved and modernized designs, domestic water heaters and a full line of commercial cookery ranges.

SERVICE Entrance and Drop Cables made by the American Steel & Wire Company have been designed to reduce the cost of service change-overs involved in the installation of ranges and other appliances in homes, and to eliminate current diversion.

Our "Tamperproof" types have a concentric bare neutral conductor applied over the insulated conductors which makes it difficult to divert current without causing a short circuit between the inner and outer conductors when the cable is cut. The "Tamperproof" types (SD and SE) are approved by Underwriters for circuits not exceeding 150 volts to ground.

Type ASE is designed primarily for use under conditions where the Code calls for an entrance cable of the "protected" type. Type USE, for underground entrances, can be buried direct in earth without ducts or other external protection. Type ASE is also approved for this same purpose.

For full information on our Service Entrance and Drop Cables write for Bulletins No. 102 and 104.

## SERVICE ENTRANCE *and* DROP CABLES

AMERICAN STEEL & WIRE COMPANY

Cleveland, Chicago and New York

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

## Manufacturers' Representatives Hold Annual Exhibit . . . .

The fifth annual electrical exhibit of the Electrical Manufacturers' Representatives Association of Baltimore, Maryland, will be held February 15-17 in Lehmann Hall, 848 N. Howard Street, Baltimore. Wide spread interest in the exhibit is indicated by the fact that the 44 booths of the show were all engaged as long as two and one-half months before the show.

R. G. Montgomery, executive secretary of the Electrical Manufacturers' Representatives Association, reports that the Association has just closed a most active year. Membership in the association has increased from 29 to 59. In addition to the annual electrical exhibit conducted in 1937, the association held a golf tournament, a crab feast, sponsored a dinner for jobbers, and cooperated with several local electrical groups in staging one-day displays.

The Association held its annual dinner at the Longfellow Hotel, Baltimore, January 7. Robert W. Test, Better Business Bureau of Baltimore, was guest speaker of the occasion.

## New G-E Position Filled By Charles E. Wilson .

Charles E. Wilson of Bridgeport, Conn., vice president in charge of General Electric's appliance and merchandise department since 1930, has been elected executive vice president of the Comany, a new position, it was announced recently by President Gerard Swope.

At the same time, Mr. Swope announced the election of Philip D. Reed as assistant to the president. Mr. Reed entered the employ of General Electric in 1926, and since 1934 has been general counsel of the lamp department with offices in New York.

Mr. Wilson, a native New Yorker, has been with General Electric and one of its constituent companies, Sprague Electric, since 1899. Few industry executives have had the broad experience which he brings to his new assignment. Beginning as an office boy 38 years ago, he has served in practically every function of the business and in many capacities.

Stuart M. Crocker, vice president of the International General Electric Company since 1930, has been appointed to the additional responsibilities of assistant to Charles E. Wilson, in his new capacity as executive vice president of the General Electric Company.

Frank B. Black, chairman of the board of directors and founder of The Ohio Brass Company, Mansfield, Ohio, died suddenly in December of a heart attack at his home. He was 72 years old and a pioneer in the electrical manufacturing industry. Under Mr. Black's guidance, Ohio Brass grew steadily until today plants are operated in Mansfield and Barberton, Ohio, and Niagara Falls, Canada.

## Okonite Company Message Appears In N. Y. Sun . .

Utilizing a full page advertisement in the "Voice of Business" edition of the New York Sun, The Okonite Company, Passaic, N. J., emphasized the fact that the electric utilities are the keystone of our national electrical structure and that restored confidence will enable this vital industry to resume its billion dollar purchasing program.

"The outstanding problem at the present time seems to be the resumption of investment in the electric utilities," reads the advertisement. "To accomplish this, investors must again be convinced that electric utilities are sound investment. Therefore, they must be assured by Government that their investments will be protected against stifling regulation and government competition.

"A billion dollar buying program awaits these assurances. And this billion dollars will surely help the capital goods industry, and through it the whole circle of buiness."

## Advent Of New Year Brings Many Personnel Changes .

**Nathan R. Birge,** assistant to the president of the General Electric Company since 1927, has been elected a vice president of the Company, it has been announced by President Gerard Swope. Mr. Birge will be located in Schenectady, where he has carried on his duties in the past.

* * *

**John F. Cunningham,** supervisor of production for the General Electric Company since 1931, has been appointed assistant to the vice president in charge of manufacturing, succeeding Myron F. Simmons, who is retiring, it has been announced by W. R. Burrows, vice president in charge of manufacturing.

* * *

**Ernest K. Higginbottom,** associated for many years with the electrical industry in the Southeast, has been appointed district representative of the Bull Dog Electric Products Company in their Atlanta territory, effective February 1. Mr. Higginbottom will maintain offices at 103 Walton St., N. W., Atlanta, Ga.

Mr. Higginbottom will represent the Bull Dog Company in South Carolina and in portions of Georgia, Florida, and Alabama. His line will include complete equipment for electrical control and distribution—modern duct systems, **Vacu-Break** safety switches, panelboards, and switchboards.

* * *

**J. A. Lee** has become a member of Kelvinator's Commercial Air Conditioning Department, and is stationed at the home office in Detroit, it is announced by H. M. McGaughey, sales manager of commercial air conditioning, Kelvinator Division of Nash-

Gerard Swope, president of the General Electric Company is snapped by the photographer as he chats with Philip D. Reed (left), newly named assistant to the president and Charles E. Wilson (right) new executive vice president.

# IF IT'S A ROASTER RANGE *it's a* MONARCH

ASK
SEE THE
ROASTER
RANGE

## w DeLuxe Models Supplement MONARCH Line for 1938

38 will be a record-making year in the history of electric cooking. or displays will be incomplete without a Roaster Range. The fast wing popularity for this top surface oven, has required additions the line of MONARCH Models designed with this equipment.

This top roaster should rightfully be called an oven because every eration performed in the oven can be accomplished in this efficiently ated compartment and with remarkable speed and economy.

Now you can offer this fast selling feature to your customers with a riety of MONARCH Models. There's one to fit each purse and purpose. rite today for photos and complete information about these 1938 ONARCHS as well as the rest of the new line of beautiful, full rcelain enamel ranges.

**MONARCH Roaster DeLuxe Model FR86L.** This beautiful DeLuxe Roaster Range is built to fill the demands of your most exacting customer. It has everything in design, construction and equipment. In addition to the full automatic roaster feature, it is offered with single or double 17-inch oven, as well as all standard MONARCH Features.

**NARCH Super-Roaster Model FC57L.** This new, comct model is a medium priced Roaster Range. With the automatic top roaster, four-unit top, a full-sized en and roomy storage compartment, it requires only inches of floor space. The new MONARCH Electric uce Pan is included as standard top equipment.

**NARCH Model 57L.** Here is the MONARCH aster Range for the low priced field. The Roaster is ndard 10-quart capacity. There is a 17-inch oven, r-unit top and storage compartment. The finish ll porcelain. The styling is modern and it's a rea NARCH value, through and through.

Monarch
SPEED · ECONOMY
TWIN EFFICIENCY

**GO MODERN WITH A MONARCH**

**MALLEABLE IRON RANGE COMPANY**
22 North Lake Street, Beaver Dam, Wisconsin

McIntyre Puffer Densmore Boeddener Dennison MacMahon Seekamp

Kelvinator Corporation. Mr. Lee was formerly sales manager for one of Kelvinator's outstanding southern distributors.

* * *

Paul B. Zimmerman, vice president in charge of sales, Norge Division, Borg-Warner Corp., recently announced a number of changes in personnel.

**Charles H. MacMahon** has been appointed national sales manager for the range department effective immediately. Mr. MacMahon's appointment comes as the result of his highly successful operations as the divisional sales manager for another Borg-Warner Division.

**R. E. Densmore** has been appointed to the position of general field sales manager, and **Paul H. Puffer** will assume title of domestic refrigeration sales manager.

Mr. Densmore, who has been domestic refrigeration sales manager for Norge for the past ten years, has taken over the duties of the newly created position of field sales manager to more closely knit the field sales activities of all departments.

Mr. Puffer, whose record as Norge district manager in the Chicago territory was one of the outstanding of the industry, succeeds Mr. Densmore as refrigerator sales manager.

**Jack Seekamp** was appointed department store sales representative. Mr. Seekamp has been operating as a product specialist for Norge for the past several years, and has established for himself an enviable record of increased volume in the territories in which he functioned.

**George Boeddener** has joined the Norge Heating and Conditioning Division organization as sales manager. Mr. Boeddener has had wide experience in jobber-dealer distribution of heating equipment, throughout the past 20 years.

Recognizing the tremendous opportunities in the development of the appliance business through the cultivation of the utility companies and their distributing organizations, a special department to cooperate with such groups has been created, and this department will be under the direction of **George McIntyre**, a vice president of the Corporation.

* * *

The division of the General Electric Company's wiring materials field organization into six national sales districts has been announced by J. H. Crawford, manager of the construction material sales division of General Electric's appliance and merchandise department, Bridgeport, Conn.

The new district managers and their headquarters are as follows: **E. G. Hall**, Boston; **F. D. Bedell**, New York; **R. R. Morgan**, Dallas; **L. F. Kummel**, Cleveland; **J. P. McIlhenny**, Chicago; and **J. O. Dillingham**, San Francisco. Wiring materials district representatives will continue to serve their respective territories, reporting to their district managers.

Morgan Giblin

**L. L. Giblin**, wiring materials field supervisor, has been assigned to special duties and studies of distribution problems.

The Arrow Hart & Hegeman Electric Company announces the appointment of **Harold J. Fonda** as manager of their district office located at 3200 Main St., Dallas, Texas. Mr. Fonda has for several years been connected

with the sales department of this company in different territories and will now take care of the southwestern territory with headquarters in Dallas.

* * *

**Bernard F. Hennessy** has been named field representative for the General Electric Home Bureau, with headquarters in Atlanta, it has been announced by C. W. Stuart, manager. He will contact builders in that territory in the interest of the G-E products and services.

* * *

**A. G. Chaffer**, who has been G-E appliance sales manager in the Pittsburgh district for the last four years, has been appointed sales manager for General Electric home laundry equipment, with headquarters at Bridgeport, according to announcement by J. M. Wicht, manager of the Home Laundry equipment division.


INSURED FOR PROFITS

FAST-SELLING FEATURES
Greater convenience—Easier operation.

NATIONALLY ADVERTISED
Leading Magazines—Sunday Newspapers.

DEALER SALES HELPS
Complete! Attractive! Free on Request.

PROFIT PROTECTING POLICY
Clean-cut Wholesaler-Retailer Distribution.

Order From Your Wholesaler. Write us for Free Dealer Helps.

HAMILTON BEACH CO., Racine, Wis.
Division of Scovill Manufacturing Co.

HAMILTON BEACH FOOD MIXER



THE "HANDBOOK OF INTERIOR WIRING DESIGN"

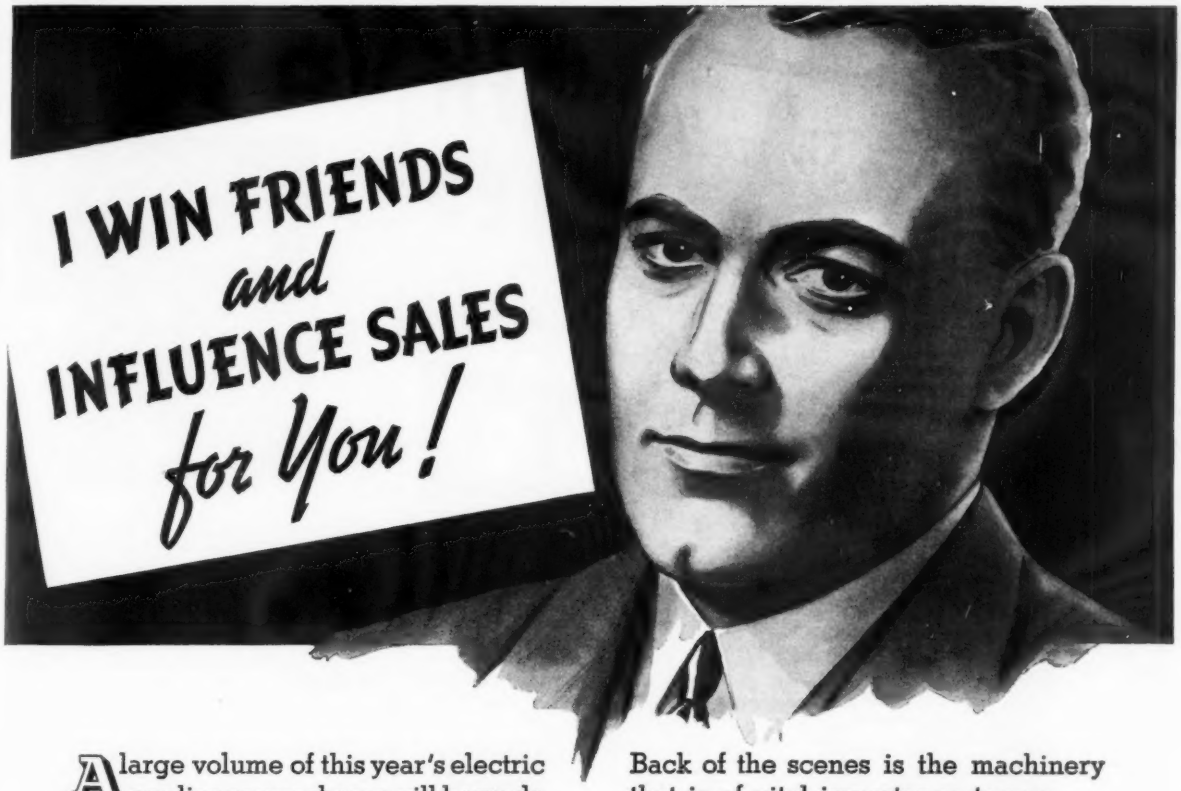
This valuable new handbook is the first standard of wiring adequacy equally acceptable to all branches of the electrical industry and is sponsored by the eight National Associations. It fills a long-felt need in dealing with the problem of inadequacy in wiring capacity and the handicap it places on electrical progress.

In preparing this Handbook, the authors have endeavored to create a reference book of value to the designer of those installations not normally handled by a consulting electrical engineer or by firms that undertake large special structures and maintain engineering staffs.

In general, the Handbook discusses "why" adequate wiring is needed, "what" must be installed to supply those needs, and "where" it should be placed. It is distinctly not a booklet on "how" to wire in the sense of covering specific wiring materials and their installation. Every effort has been made to include all of the factors that enter into the smaller job while only an outline of procedure has been given for larger installations.

This valuable handbook may be secured with a 3-year subscription to ELECTRICAL SOUTH for $2.50 or with a 5-year subscription for $3.50.

ELECTRICAL SOUTH
GRANT BLDG. ATLANTA, GA.

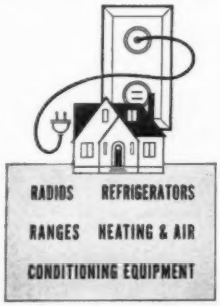



A large volume of this year's electric appliance purchases will be made by people with whom I stand high. I can influence many of them in your favor. That's why it should be important to you to know me better . . . to know all the advantages you get when I am working with you and *for* you.

Millions of families have bought automobiles, refrigerators, home laundry equipment and other electric appliances on the Commercial Credit Company time payment plan. They have first hand knowledge of the fair and friendly treatment they get. When you offer them this same service in the financing of electric appliances you have their confidence and good will from the start.

Back of the scenes is the machinery that is of vital importance to you . . . careful credit investigation to prevent risky sales—speedy remittance of your money—an effective but frictionless collection system that relieves you of worry or embarrassment.

With my help on the credit and financial side, you will be free to concentrate on selling and merchandising. That's your main job. That's where your profits come from.




I'm the local manager for Commercial Credit Company. I have headquarters in 205 offices in the principal cities of the United States and Canada. . . . Call on me freely for information and help.

# COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS
CONSOLIDATED CAPITAL

HEADQUARTERS: BALTIMORE
AND SURPLUS $64,000,000

SERVING MANUFACTURERS, DISTRIBUTORS AND DEALERS THROUGH 205 OFFICES IN THE UNITED STATES AND CANADA

# Announcing Something NEW for PUNCHING HOLES in Metal Boxes and Panels

New Cap Screw and Drive Nut for the ½" Knockout Punch

Greenlee Knockout Punches have always been efficient tools, even in the size for ½-inch conduit. However, in order to increase the length of service of the ½-inch punch in cutting ⅞-inch holes in the heavier-gauge sheet metals, and to speed up the operation, a new driving arrangement has been designed for use with the standard punch and die. This consists of a cap screw with two threaded sections and a hexagon drive nut, as shown to the left.

The assembled unit is shown to the right. In this arrangement the small thread merely holds the punch in position, and the actual drive is by turning the nut on the larger threaded section. The advantages are that the speed of cutting is increased, and that this heavier thread is better able to resist the wearing action of the nut, when turned against the thrust of heavy punching.

½" Punch with the New Screw and Drive Nut

## Greenlee Knockout Tools are Timesavers

Knockout Punches are made for all sizes of conduit from ½" to 2".

Greenlee Knockout Punches are time and labor-saving devices to a much greater extent than their simple appearance would indicate. They eliminate all reaming and filing in the enlargement of holes in metal boxes, etc., and they perform the operation in a fraction of the time required by old methods. They are put up in two sets for conduit from ½ to 1¼-inch and for 1½ and 2-inch conduit.

When holes larger than 2-inch are to be made, the Knockout Cutter, not illustrated here, is required. It is an adjustable tool for cutting holes for all sizes of conduit from 1½ to 3-inch. Like the punches, it handles the job of hole enlargement with speed and accuracy, leaving a hole that is smooth and round.

OTHER GREENLEE TIMESAVERS: Conduit Benders, Pipe Pushers, Ball-Bearing Joist Borers, Electrician's Bits, Bit Extensions.

## GREENLEE TOOL CO., 1707 Columbia Ave., Rockford, Ill.

— — — — — — — — — Use This Coupon and Save Time — — — — — — — — —

GREENLEE TOOL CO., 1707 COLUMBIA AVE., ROCKFORD, ILL.
Please send information on the following tools:
☐ New Drive for ½" Knockout Punch ☐ Knockout Punches ☐ Knockout Cutters
☐ Conduit Benders ☐ Joist Borers ☐ Electrician's Bits ☐ Bit Extensions

Name ---------- Address ----------

City ---------- State ----------

My Jobber is ---------- ES2-38


Announcement of the appointment of **John C. Sharp** as chief engineer of the Edison General Electric Appliance Company, Inc., of Chicago, has just been made by A. D. Byler,

vice president and general manager of the company. Mr. Sharp succeeds Charles P. Randolph, whose death in November ended his long and brilliant career with the comany.

**Leo F. Berg** has been appointed as engineer in charge of the Range Engineering Division of the company by J. C. Sharp, chief engineer.

* * *

Square D Company has just announced the appointment of **Walter H. Bodle** as assistant to the sales manager, C. L. Hull. Mr. Bodle has previously been in charge of the Indianapolis office of the company. Prior to his joining the Square D Company, Mr. Bodle was connected with the Englewood Electric Company of Chicago, as their Indianapolis representative. Concurrent with Mr. Bodle's appointment, the order and billing departments have been merged with the sales department under his supervision.

* * *

The appointment of **Don M. Chriss** to the department store sales staff has recently been announced by R. E. Imhoff, Westinghouse Merchandising

Division sales manager. Mr. Chriss will devote his time to the promotion of the entire line of Westinghouse merchandising products for department store activity. He joins the Westinghouse company with unusually broad experience in both the department store and electrical appliance field.

*Distinctive Luxurious this*

*NEW ORLEANS*

**FINEST HOTEL IN DIXIE**

Warm cordiality, an atmosphere of rare beauty and good taste, a sincere regard for your well-being—plus the modern equipment, service and the fine, satisfying foods that make comfortable living away from home possible. These things have won and kept leadership for The Roosevelt.

These indispensible things are yours to command at the most moderate tariff. 800 rooms with bath.

*Write or wire Reservations, JAS. PAT O'SHAUGHNESSY, V.-P. & Gen. Mgr.*

*Get this Famous Louisiana Plantation Candy*

Full halves of selected Louisiana Pecans in a luscious layer of pure Louisiana Cane Sugar. New Orleans' famous candy, made from the recipe of the Old Plantation Mammy. Two attractive gift boxes: SOUVENIR COTTON BALE PACKAGE, 10 Pralines for $1.75. Postage paid. PLANTATION MAMMY PACKAGE, 12 Pralines, $1.50. Postage paid. Send Money Order or personal check with order to The Roosevelt Hotel, New Orleans.

BY MAIL

The Roosevelt HOTEL "Pride of the South"

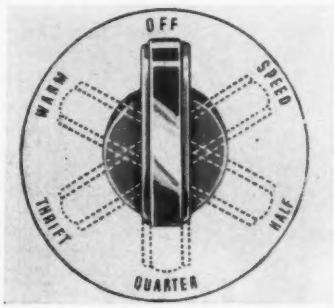
**The pleased look on the lady's face isn't caused by Benny Goodman or Bing Crosby, because that's not a radio. It's the control cabinet for the electric blanket which General Electric recently developed. And the lady is pleased because she can open the windows wide and remain comfortable without piling on several more blankets. . . .**

## Five-Speed Surface Unit Now On Every Hotpoint Model . .

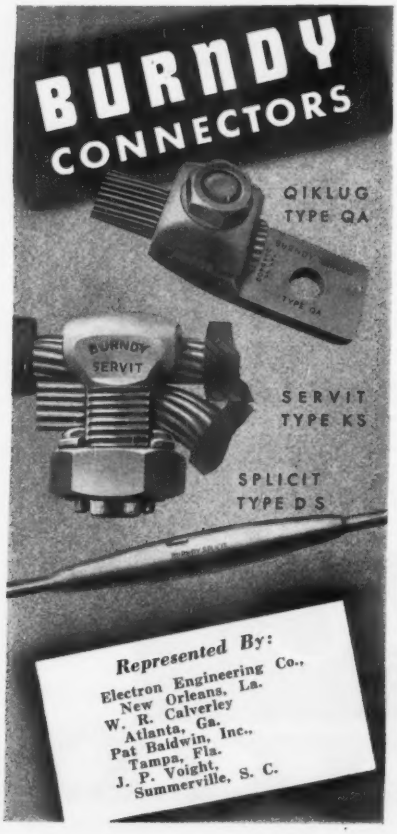
As standard equipment on all of the new 1938 Hotpoint electric ranges, Hotpoint announces a sensational new heating unit known as "Select-A-Speed Calrod", which provides a choice of five accurately controlled degrees of heat for all surface cooking operations. Each of the ten new Hotpoint range models will be equipped with one of the new units in the 6½ inch utility size.

According to Hotpoint engineers, under whose direction the unit was developed, Select-A-Speed brings greater speed to electric cookery and, at the same time, contributes to greater economy of operation. It offers a range of cooking speeds from a warming heat of 80 watts to a high speed heat of 1300 watts.

Hotpoint describes the five cooking speeds as follows: 1. Speed, 1300 watts. Intense glowing heat for a fast start or for quick frying or braising. 2. Half, 650 watts. For




frying, steaming, boiling, stewing. 3. Quarter, 321 watts. To continue steaming, for slow drying, or to cook dried vegetables. 4. Thrift, 160 watts. A slow, simmering heat. Just the right heat to continue steaming and to cook welsh rarebits and omelets. 5. Warm, 80 watts. A really low heat to keep foods warm without burning.




## Aid For Salesmen Offered By Kelvinator . . . . .

As the spear-head of its aids for electric range dealers in 1938, the Advertising and Sales Promotion Department of Kelvinator Division, Nash-Kelvinator Corporation, makes available to all outlets the "Konvince-Her" demonstration board, a new and unique silent partner for the salesman.

The Konvince-Her has been developed in line with Kelvinator's belief that the electric range has arrived at a point in its sales progress where the effort should now be made to attract the mass market, rather than concentrating on the upper income groups, and that to do so effectively, the consumer public and the salesman alike must be enabled to visualize easily the advantagesof electric cookery.

## Toastwell Automatic Toaster

The Utility Electric Company, St. Louis, Mo., has just introduced a new four-slice automatic toaster in its Toastwell line. The outstanding feature of the new toaster is the time master control which assures uniform toast at all times. It automatically shortens toasting period as the toaster gets hot, lengthens it when cold. This feature produces toast to the same degree of browness each time.

The appliance is a front control oven-type toaster with smooth modern lines, massive in appearance, designed for easy cleaning, and finish-

ed in long lasting chrome. It is entirely automatic in operation going on low heat when plugged in and changing to high heat when switch is set. A bell rings when toast is finished. It toasts four slices on both sides at the same time.

**The Kelvinator Konvince-Her is a durable demonstration board, standing shoulder high, equipped with a chart and numerous household kitchen articles. The board serves as a simple laboratory whereat the salesman can quickly and graphically illustrate in a concrete manner those intangible values of electric cookery which are hard to visualize merely through the spoken word . . .**

# "Sure, I'm a TOUGH GUY ... sometimes!"

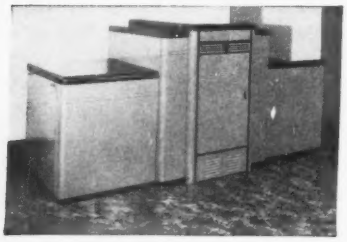
"I saw an advertisement run by The Associated Business Papers that pictured me as typical of the prospects that advertisers' salesmen classify as 'tough guys.' The ad went on to say that while I am tough when salesmen call, I am pretty regular when I am reading an A.B.P. publication. Well, I don't resent it a bit. With so many keen salesmen calling on me every day, I have to pretend to be hard-boiled most of the time.

"But you can be sure that I put aside that 'protective mask' when I am reading ELECTRICAL SOUTH because that is where I go to keep in touch with trends and developments; for practical ideas suggested by an editor who is familiar with my business. I know that ELECTRICAL SOUTH is written for *me*, not for its advertisers. Yet I read the ads, too, because I know that they are in there only because they have something to offer — not because they got editorial publicity.

"I pay cold cash for my subscription to ELECTRICAL SOUTH and you can bet I wouldn't do it unless I get my money's worth."

### Package Air Conditioners For Home Use Introduced . . .

Both mechanical perfection and beauty of design characterize the recently announced Westinghouse Home Air Conditioning Units. Westinghouse is entering a residential year around air conditioning market with a very compact "packaged" oil or gas fired unit, attractively finished in international tan color with agate red trim. While occupying only a minimum of floor space this new unit will have ample capacity for the



largest of residences. A great deal of attention has been paid to the styling and designing of these units so they harmonize with other furniture in the finished basements.

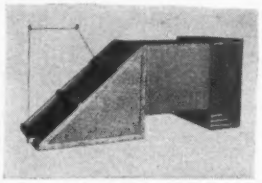
The new Westinghouse Home Air Conditioning Systems are designed for year around service. However, the summer air conditioning equipment may be added after the winter system has been installed whenever desired. The winter system is complete with automatic burner, providing uniform, clean, controlled heating for the entire house. A powerful blower, operating at slow speed and consuming a minimum of current circulates large volumes of air for both the winter heating and the summer cooling. The air in this system is cleaned by "V" angle filters, so constructed to minimize the air motion resistance, yet trap large quantities of dirt, soot, pollen and other foreign matter. Humidification is accomplished by either drip or spray type according to requirements.

For summer cooling the Westinghouse Seal-Less Condensing Unit is provided together with cooling and dehumidifying coils precisely matched to the condensing unit for balanced capacity.

---

### Attic Fan Is Complete Package Unit . . .

The Viking "CirCOOLator" for practical home cooling by means of attic ventilation is a factory-built package, complete with sound-absorbing vent box, low resistance ceiling grille, and flame-proof trap door with fusible link. An automatic switch starts the motor when the trap door is raised and shuts off when door is closed.



Nicest feature of the "CirCOOLator" from the dealer's point of view is the simplicity of the installation. All erection problems have been pre-engineered by the factory—the installer merely follows a few simple instructions.

Available with 30″, 39″, and 45″ fan diameters, the "CirCOOLator" air delivery is 7000 cfm, 10,000 cfm, and 14,000 cfm respectively. It is a product of Viking Air Conditioning Corp., Cleveland, Ohio. Further details are given in Bulletin No. 44, copies of which are available upon request.

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### New Emerson Fan Catalog

The Emerson Electric Mfg. Company, St. Louis, Missouri, offers "Emerson-Electric Fans for 1938"—a new complete catalog elaborately printed in color, illustrating and describing the new desk fans, new stand fans, new ceiling, air circulators, ventilating, and exhaust fans. The company enters its 48th year with the same progressive spirit that has characterized it in the past with new products, improvements in style and efficiency, and for the 24th consecutive year the well known Emerson-Electric 5-year Factory-to-User Guarantee.

A copy of this catalog will be mailed to those requesting it on their company stationery.

### Benjamin Industrial Catalog Now Available . . . . .

Just off the press, newly revised edition of Benjamin Catalog No. 26—includes data on the latest improvements and lighting developments and lighting developments of the past twelve months. A veritable encyclopedia of industrial lighting, flood lighting and signals—packed full of vital information, dealing with illumination problems of every conceivable type.

This 352 page, loose leaf book, in addition to supplying complete commercial data on the Benjamin line, thoroughly details a vast number of specifications, engineering recommendations, floor layout plans, intensity formulae, cost and labor-saving hints, lighting efficiency curves and installation illustrations. For complimentary copy, address Benjamin Electric Manufacturing Company, Des Plaines, Illinois.

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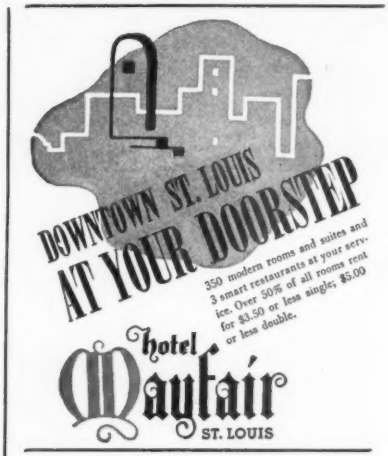
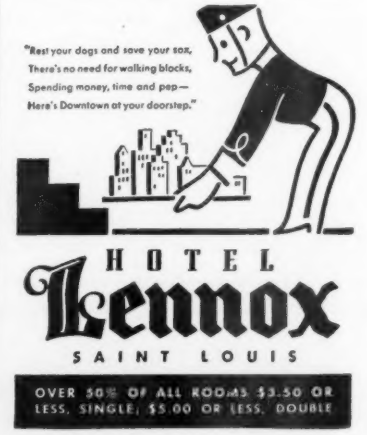
### Feeder Systems Discussed In Trumbull Bulletin . .

A 36-page bulletin, No. 165 clearly describing and illustrating the three feeder distribution systems—Buss-Wa, Flex-o-Power and Trolley Closur—manufactured by the Trumbull Electric Mfg. Co. Plainville, Conn., has just been released for distribution.

Crapo
GALVANIZED PRODUCTS
Seven Wire Steel Strand
Telephone and Telegraph Wire
Where strains and stresses are heaviest, where corrosion takes its greatest toll, Crapo Galvanized Steel Strand and Telephone Wire long ago demonstrated their outstanding superiority. The heavy pure zinc galvanized coating, maximum tensile strength and proper ductility insure longer life and lower maintenance cost. Insist upon Crapo Galvanized Products for better performance under all conditions!
Indiana Steel & Wire Co.
Muncie, Indiana
Crapo Galvanized Products are available in all standard grades and sizes.
INDIANA STEEL & WIRE CO.
MUNCIE, IND.


DOWNTOWN ST. LOUIS AT YOUR DOORSTEP
350 modern rooms and suites and 3 smart restaurants at your service. Over 50% of all rooms rent for $3.50 or less single; $5.00 or less double.
hotel Mayfair
ST. LOUIS


"Rest your dogs and save your sox,
There's no need for walking blocks,
Spending money, time and pep—
Here's Downtown at your doorstep."
HOTEL
Lennox
SAINT LOUIS
OVER 50% OF ALL ROOMS $3.50 OR LESS, SINGLE; $5.00 OR LESS, DOUBLE

# Cold days, these...

unless you are lucky enough to be handling General Electric Heating Devices.

Then, of course, you are spending profitable hours in a warm store. You have the advantage of selling the complete accepted line of Heating Devices. Your customers feel assured that each General Electric Heating Device you supply will be of the same high quality as the previous G-E appliance purchased.

General Electric Heating Device advertisements in the 15 leading National Monthly Magazines with a total circulation of over 25,000,000 and an estimated readership of over 100,000,000 is bound to create a tremendous store patronage for you. Use the many free sales promotion helps which General Electric offers you for local tie-in so that you may direct these prospective customers to your store and thus profit to the utmost.

**SALES HINT OF THE MONTH**

Set up a complete window of General Electric Heating Devices using the free Streamlined Iron and Table Appliance Display Cards as a background. Feature the complete new roaster deal in the most favorable traffic location.

Make a mailing of the General Electric Heating Device Full Line Folder to a selected list of your customers. Promote the complete line of General Electric Heating Devices.

GENERAL ELECTRIC

# PRACTICAL

## Modern — Economical

Popular die cast aluminum alloy meter cabinet . . . absolutely rustproof and weatherproof . . . double-strength glass window . . . Takes any standard single phase meter up to 50 amperes. . . . Economical and highly serviceable.

# WALKER

## ELECTRICAL COMPANY

ATLANTA, GEORGIA

### Kisco Introduces Novel Fan And Table Combination . .

The Kisco Cool-Circle-Ator table, through its special design and arrangement of blades, draws an abundance of cool air and quietly recirculates it around the room without creating blasts, drafts, or annoyance.

Its applications are fully illustrated and described in an attractive, colored folder, available upon request from the manufacturer, the Kisco Company, St. Louis, Mo.

### New Kearney Insulated Link

The James R. Kearney Corporation, St. Louis, Missouri, announces a newly developed extra strength insulated link. This new accessory is used in conjunction with Kearney Hi-Line tools on live line maintenance work and is a safety device for holding the conductor away from the men working on the pole. This link also provides insulation between pull-off ropes and the conductor.

Kearney engineers recommend these insulated links when clamp heads and swivel butts are installed on Kearney tested oak poles at the factory, for safely working loads up to 5,000 lbs.

Laminated oak poles 1¼" in diameter in 2' and 4' lengths are standard but special length poles can be supplied.

### Pedestal Type Kool-Waiv Fans Available . . . .

In addition to their complete line of Thrift exhaust fans, International Engineering, Inc., Dayton, Ohio, now offers a pedestal type air circulator in two sizes. Designed to throw a tube or column of air of from 60 ft. to 125 ft. in length (depending upon size of fan) without much expansion in the width of the stream, these fans are particularly effective for air circulation in stores, offices, ballrooms, cocktail bars, banks, etc.

The two sizes include a 22-inch fan having two speeds, and a single speed, 14-inch fan. Both fans are quiet in operation, special laboratory "decibel" testing equipment being used to assure a minimum of operating noise.

Both models feature a substantial pedestal consisting of a large diameter, well shaped non-tilt base and a heavy, telescopic column, adjustable in height. Propeller guard is plated with a brilliant rust-proof alloy. Bulletin 63 gives details.

### Surface-Mounting Fixtures

For installation on finished plaster ceilings and under other conditions where semi-recessed units are impractical, Surface-Mounting Ster-Lite Fixtures have been developed by Reflector & Illuminating Company, Chicago, Ill.

Through a balanced combination of Sterling Silvered-Glass Reflectors and opal glass louvers, these fixtures afford intense illumination of working planes with diffused lighting of vertical surfaces.

Ster-Lite Fixtures are distinctly modern in design and are available in ivory or sprayed aluminum. Made in one size for 300 to 500 watt lamps.


MASTER-LIGHTS

*World's Most Powerful and Serviceable*

Hand Searchlights - Worklights
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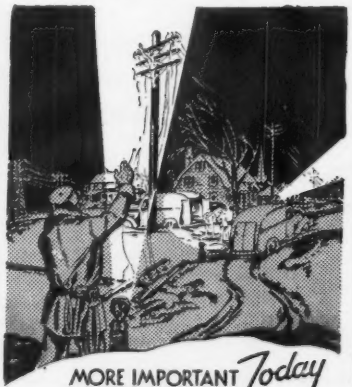

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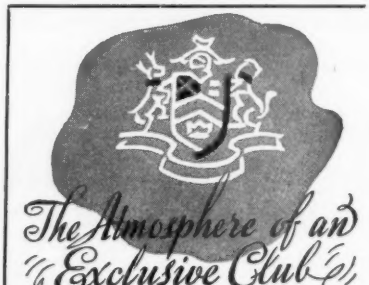
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and yet over 50% of all rooms for $3.50 or less single; $5.00 or less double.
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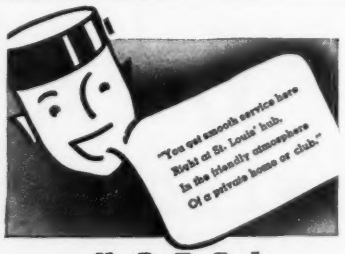
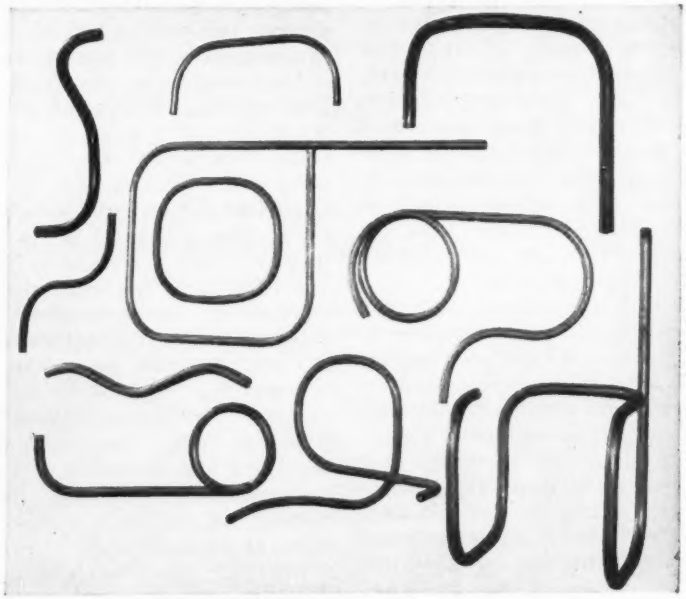
ST. LOUIS

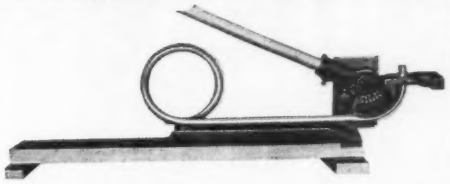



HOTEL Lennox
SAINT LOUIS

OVER 50% OF ALL ROOMS $3.50 OR LESS. SINGLE. $5.00 OR LESS. DOUBLE

## ELPECO *Type HB* TUBE and CONDUIT BENDER





This tool actually makes perfect bends. For ½" - ¾" - and 1" thin wall *and* rigid conduits.

"Used Where Quality Bends Are Needed."

Eliminates "kinks" in both conduit and "back".

The degree indicator is a feature for quick and perfect duplication of bends.

*Consult Your Local Jobber.*

"JUST A FEW SAMPLES OF UNUSUAL BENDS"

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**412 N. 18th Street, Philadelphia, Pa.**

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*Landmarks of Southern Friendliness*

You will find the Dinkler Hotels located conveniently on all principal highways in the South . . . in each you will find a cordial welcome by a cheerful, friendly staff. The rooms are large and well ventilated . . . each with private bath and radio . . . garage connections are convenient and popular prices prevail in dining rooms and coffee shops.

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★ The SAVANNAH IN SAVANNAH, GA.
★ The ST. CHARLES IN NEW ORLEANS, LA.
★ The ANDREW JACKSON IN NASHVILLE, TENN.
★ The JEFFERSON DAVIS IN MONTGOMERY, ALA.
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★ The O. HENRY IN GREENSBORO, N. C.

MODERATE RATES

*ILLUSTRATED FOLDERS SENT UPON REQUEST*

**DINKLER HOTELS,**
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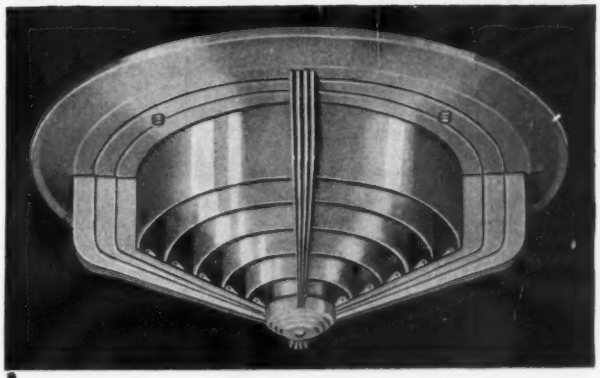
**OPERATING 3000 ROOMS IN SOUTHERN HOTELS**

## STER-LITE FIXTURES



NOW another Sterling achievement revolutionizes lighting of commercial interiors.

Combining the high efficiency of Sterling Silvered-Glass Reflectors and the light-diffusing qualities of opal glass louvers, Ster-Lite Fixtures give high lighting intensity with relatively low wattage—brilliant illumination of working planes with diffused lighting of vertical surfaces.

An attractive folder just off the press gives detailed pictures and photographs of actual installations. Write for your copy today.

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REFLECTOR & ILLUMINATING CO.
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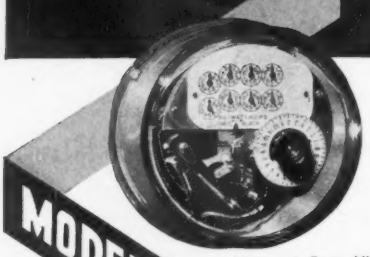
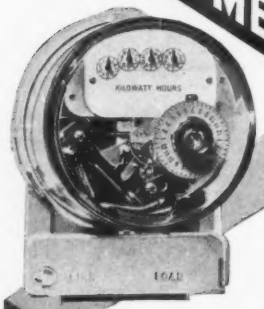
METER
and
CONTROL
Off-peak Loads
with



MODERN METERS

Sangamo Type HV-S-2
Two-rate Meter, Socket
Mounting



Sangamo Type HV-A
Meter and Time-Switch
In "A" Base

For MODERN LOADS

A complete line of
Sangamo Combination Meters and
Time-Switches is available fulfilling the
requirements of any off-peak rate.

SANGAMO
ELECTRIC
COMPANY
SPRINGFIELD, ILLINOIS

## How Safe Are Customers In Your Store . . . .

(*Continued from page* 18)

Keeping customers and other invitees out of parts of the store building that are especially hazardous, will help the proprietor to reduce the risk of injury to his business guests. "Keep out" or "Private" signs shold be conspicuously placed to warn invitees away from rooms containing stock, tools, engines or any kind of operating machinery or equipment.

Children are a special risk in a store. If a child is attracted to something in the place—a machine or sharp tool, for example—and is hurt when he attempts to play with it, the owner is responsible for the injury. The law recognizes that machinery and other things have a natural attraction for children, and the burden is put on the owner of such "attractive instrumentalities" to prevent children from getting access to them and being hurt by them.

Inadequate lighting of a store may also lead to trouble. If a customer falls down a stairway or trips over an obstruction or bumps into a sharp, protruding edge, insufficient light may be the true cause of the accident. Which means, again, that the proprietor pays the damage.

## I. E. S.—What This Symbol Really Means . . . . . .

(*Continued from page* 6)

where millions of people, young and old use their eyes each night for reading, sewing and other visual tasks.

The Society passed on the specifications of this lamp to manufacturers without charge, but with such restrictions that would assure design and construction of high and uniform standards. The experience of the good lighting results from this lamp in the home has resulted in improved lighting in stores, factories and offices.

Lamp designers who formerly designed lamps from the standpoint of appearance only have learned something of the control of light, of brightness, of footcandles and other essential features for satisfactory lighting results, from the I.E.S. lamps. Where formerly, a 100-watt lamp was a rarity in a home, today it is common in thousands of homes. The I.E.S. lamps have paved the way to the general introduction of wattages on the order of 200 and 300 watts in the home—a feat considered impossible before the advent of this lamp.

But with all of these benefits, perhaps the greatest of all is the intangible but inevitable educational effect it has had on the public with respect to the cost of light. The I.E.S. lamp has demonstrated conclusively that electricity is cheap. It has proved that 100, 150, 200 and 300-watt lamps can be operated for *fractions of a cent per hour*. The logical assumption from this, then, is that if so-called big bulbs like these cost so little to operate, electric cooking, water heating, and other services likewise must be inexpensive.

Relatively small in size, 2,500 members, the Illuminating Engineering Society is contributing heavily toward the arduous task of leading the half-seeing world from darkness. As we emerge from the pall of darkness, which persists not only at night but even during the day in our homes and work places, we may begin to realize that better lighting will make for even higher living standards than have ever been enjoyed before.

## Mississippi's State Fair

(*Continued from page* 7)

The high pressure salesman of years gone by has little of its appeal left in the rural sections; it is more suitable for the city, if anywhere. The farmer wants to see the results from the appliance he is inspecting, not hear about it from the salesman beside it.

"The salesman should explain other factors about the instrument, guiding his prospective rural customer in asking questions about it," stated Owen Cooper of the REA. "Otherwise, he will be greeted with an undeserved but natural suspicion."

**FOR SALE**

**An electrical shop, fully equipped for Motor, Armature and Transformer Rewinding. Gross business between twelve and fourteen thousand per year. Will sell at sacrifice. Address Box 59, care ELECTRICAL SOUTH, Grant Bldg., Atlanta, Ga.**

**TIME SWITCHES** $4.95 and up

With capacities from 5 to 400 Amperes

**FLASHERS** $6.50 and up

All Types and Arrangements of Circuits for Every Effect.

*For Detailed Information, Write*

**Automatic Elec. Mfg. Co.**

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New nut housing. Locks Anchor firmly on rod. Rod cannot slip thru Anchor when being installed.

Engineers appreciate Everstick features which assure safety, long life and ease of installation in any soil condition.

A complete line with 3 types of expanding Anchors and rigid types of Cone Anchors. All sizes and holding capacities. Write for Everstick literature including new folder on Rural Electrification Lines.

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**NOW AVAILABLE**

*on many makes of ranges. Ideal for replacement, too. Fit any range.*

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and
CHROMALOX
EQUIPPED PRODUCTS

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ATLANTA, GEORGIA

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HERE'S A *Challenge* THAT WILL MAKE YOU MONEY . . .

**PELCO DEALERS**

REACH PROFITABLE VOLUME IN 30 DAYS TIME . . .

That's a real challenge to any dealer who is interested in a volume-building, profit-making refrigeration unit. PELCO is the sensation of the industry — it makes its own floating ice — chills bottled beverages from room temperature to desired degree in 30 minutes — gives the customer twice as much because it's both an efficient beverage cooler and a refrigerator. GET the FACTS on PELCO NOW. Cash in on this real line! Address Desk O-107.

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★ A clean sweet manufacturing job. Backed by real factory help.

★ Package-Type units. Plug into any light socket.

★ Makes its own floating ice, automatically, as needed.

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**PELCO** *Electric*
BEVERAGE-FOOD COOLER

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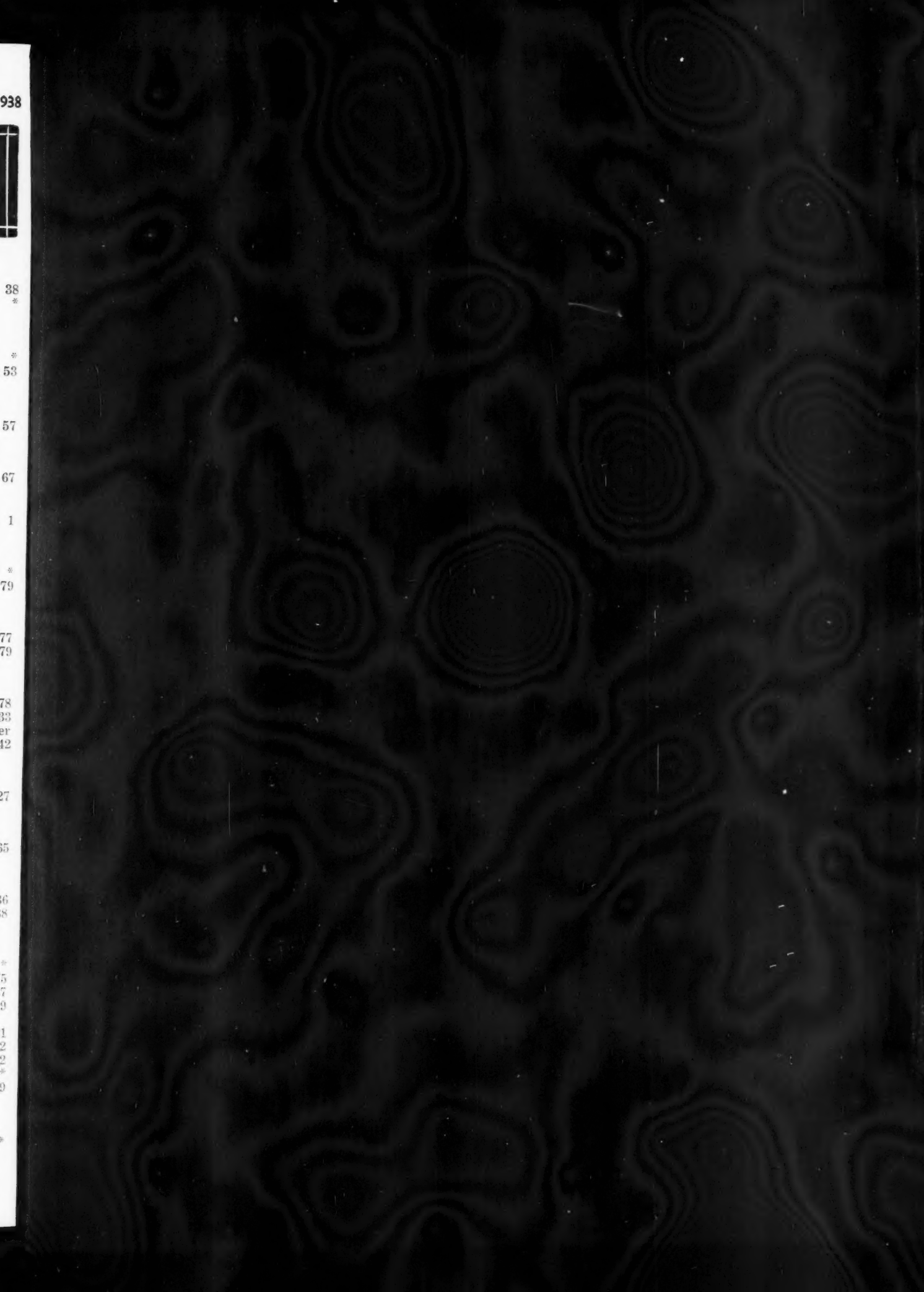
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